



366-348 Fuel Injection Conversion Installation Instructions

1975-1980 MGB
with a Zenith Stromberg Carburetor

CARB E.O. Number D-453-4 (75-79)

Introduction

The US Spec MGBs built from 1975 on were designed around the emissions standards adopted by the United States. The engine and the emission control components constitute a single system that work together to burn fuel more efficiently and produce less pollution. When new, the cars had a reputation for cold start problems and general drivability issues. These historical problems have been compounded by a lack of replacement parts. It's no surprise that tuning the car and getting it to run correctly is very difficult, and many owners have found it impossible to meet the emission standards applied to these cars. Instead of simply getting the ZS carb parts manufactured, we decided to address all of the problems by eliminating the ZS carb entirely. After considering all the options, we decided to develop a fuel injection system.

You will be happy to know that the fuel injection system completely eliminates the cold start and general drivability issues long associated with the ZS carburetor. This kit will turn you MGB into the car you wanted when you bought it- a classic British sports car that starts every time, runs smoothly, accelerates cleanly, and is just plain fun to drive. On top of that, this kit (in conjunction with all the original emission control equipment) brings the car back into compliance with the emission standards. We have gone through the California Air Resources Board (CARB) certification process and we were issued CARB Executive Order D-453-4 for the 75-79 MGB as a result.

This kit is designed and engineered specifically for a stock 75-80 MGB in good mechanical condition with all the original smog equipment in place and working. Before you lift a wrench, do a complete tune-up to factory specifications. Check the compression, adjust the valves, and most importantly, make sure your ignition system is working as it should. Worn distributor shaft bushings, old plugs, bad plug wires, worn or cracked distributor cap and rotor, or non-functional mechanical and vacuum advance mechanisms will not be cured by adding fuel injection. Our fuel injection system cannot bring a car into compliance with emission regulations if the catalytic converter is shot.

We realize that many of the 75-80 MGBs no longer have all the original equipment. Many of the ZS carbs have been converted to a manual choke. Catalytic converters have disappeared. The OE cam may have been replaced with an earlier version. We have prepared instructions based on two MGBs, a 78 and an 80, that were mostly unmodified and they still had the emissions equipment intact. Cars that have been modified will require some improvisation, and I regret that we are not going to be able to tell you how to deal with these variations. We have installed this kit on several cars, and installed and removed it several times. We have spent literally weeks fine tuning the instructions. Inevitably, there will be something we missed, or something we did not explain well enough. You can help us improve this product by sharing your experience- if you have any comment or suggestions, we'd like to hear them. Please log onto <http://www.mossmotors.com/> and select "Contact Us"; a simple email form will pop up.

Tools Needed

Safety Goggles	Extensions, long, medium, short
Rubber gloves	Torque Wrench. 3/8" drive
Electrical tape	Allen wrench 5 mm
Masking tape	Gasket scraper
Black felt pen/marker (Sharpie)	Locking pliers (vice grips)
Pencil	Hacksaw
Penetrating oil	Dremel tool or grinder
Brake Cleaner (aerosol)	Fuel Siphon pump
Gasket dressing (Hylomar or RTV)	Fuel storage container
Gasket cement, tacky	Drill, cordless if possible
Thread sealant, liquid	3/32" drill bit, #30 (0.1285") drill bit.
Permatex #54540 or equivalent	1" hole saw
Antifreeze-water mix (50/50)	Jack & Jack stands (4)
Wire crimpers	Flashlight
Wire cutters	Small Mirror
Single edge razor blades	Workshop Manual, Factory or Bentley (215-325)
Hose cutter	Nice but not absolutely required
Screwdrivers, small medium and large	Stud puller
Flat bladed and Phillips	An assortment of nut-drivers will help with the
Open end wrenches: 7/16, 1/2, 3/4, 13/16"	hose clamps
Ratchet 3/8" drive	
Sockets: 7/16", 1/2", 13/16"	

Before You Begin

You will be working with gasoline. Store fuel in proper containers and avoid any open flames or other ignition sources. Work in a well ventilated area and observe all normal shop procedures.

As with all projects, please read through all of the instructions before you pick up a tool. We are not going to thoroughly explain things that are covered in the factory workshop manual. Terms used: front and rear refers to the front or rear end of the car. Left and right refer to the left and right side of the car as seen while sitting in the cockpit facing forward.

These instructions include many photographs, mostly of the later cars. Those of you with 75-76 MGBs will recognize this immediately. There will therefore be steps in these instructions that apply only to the later vehicles, and we have tried to make this clear in the instructions.

Installation Part 1 – Prepare the Vehicle, Drain Fluids

1. Disconnect the battery ground cable.
2. You will need a solid, level surface to work on.
3. Jack up the rear end of the car and support is securely on two jack stands.
4. Drain the fuel tank. The safest method is to use a fuel siphon pump to transfer the fuel into a proper gasoline storage container. *The original fuel tanks fitted to later cars do not have a drain plug, but if your tank has one, use it. If you find rust particles or flakes in the tank, consider having the tank cleaned and sealed. Rust flakes will clog or damage the high pressure fuel pump included with this kit. If you have any doubts, fit an in-line fuel filter (377-310) in the hose between the tank and the high pressure pump when you reach that point in the installation.*
5. Unpack the fuel injection kit components.
6. Drain the coolant. For the 77-80 sealed system, we need to break the vacuum. Remove the plug (1.1) screwed into the top of the thermostat housing using a 13/16" wrench. Remove the gasket that seals the plug to the housing. Set the plug aside. *A new 328-485 gasket for the plug is included in the kit which we will use when we re-fill the system at the very end.*
7. Under the car- Position a pan to catch the coolant. Loosen the clamp on the lower radiator hose and pull the hose off the radiator outlet. When the coolant has drained, replace the hose and tighten the clamp. *The original radiators fitted to later cars did not have drain taps, but if you have one, use it Collect the coolant in a clean container and set it aside- you will re-fill the system with this coolant at the end.*

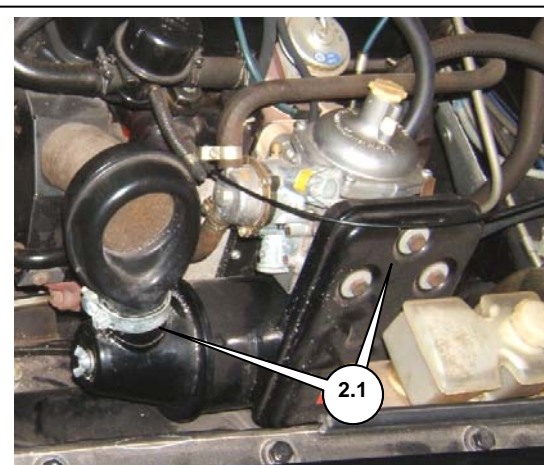


366-348 Inst Fig 1 [1977-80 MGB]

Part 2 - Remove the ZS Carb

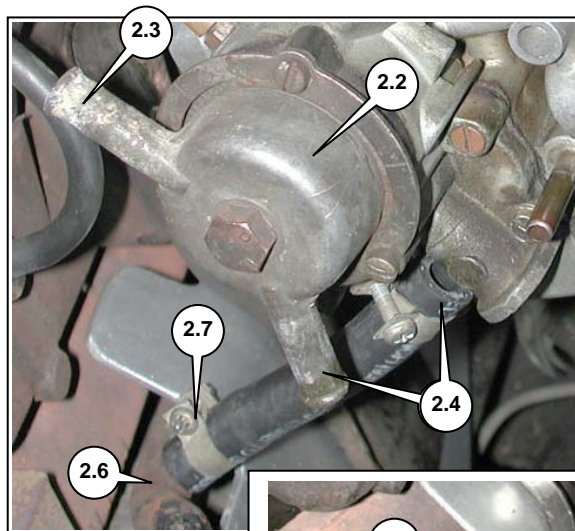
Wear eye protection. As you disconnect cables & hoses from the carb, take the time to label them- use the black felt pen and masking tape. It will avoid confusion later.

8. Disconnect the throttle return spring.
9. Trace the fuel hose from the filter on the firewall to the carb. Loosen the hose clamp on the hose at the carb and pull the line free carefully. Wrap a rag around the end to catch any fuel that comes out. *Even though the tank is drained, there will be fuel in the carb and in the fuel hoses. If you have late MGB, you may find a mechanical fuel cutoff valve between the filter and the carb. Disconnect and remove the hoses; the valve will be removed later. See Part 7 for more information.*
10. Remove the air cleaner assembly (2.1).



366-348 Inst Fig 2D

11. Locate the water choke on the ZS Carb (2.2).
12. Loosen the hose clamp and disconnect the coolant hose that runs from the water choke (2.3) to the water choke outlet at the back of the cylinder head (2.4).
13. Loosen the hose clamp and disconnect the coolant hose that runs from the water choke (2.4) to the steel coolant line (2.6) that runs next to the exhaust manifold.
14. Loosen the hose clamp and disconnect the coolant hose at the nipple on the coolant hard line (2.7). If the hose is difficult to remove, slice it lengthwise with a razor blade at the nipple (3.1). *If the ZS carb has been converted to a manual choke, you may find that the hose will run from this nipple (3.1) to the fitting at the back of the cylinder head (see 4.2 below). In other cases, the nipple (3.1) may have been capped off or plugged with a piece of hose and a bolt. If your MGB has been fitted with a manual choke, you may remove the cable assembly from the car.*

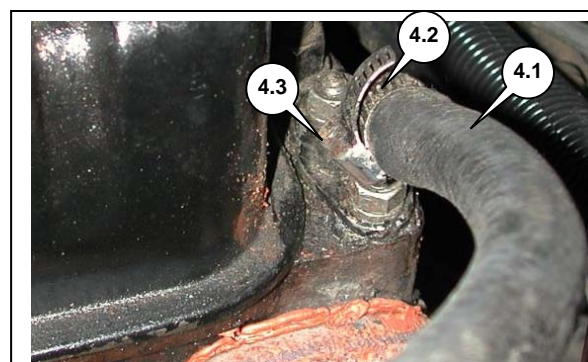


366-348_Inst_Fig 2C



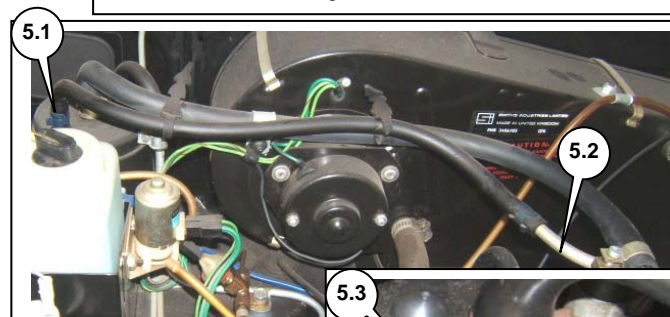
366-348_Inst_Fig 3

15. Locate the hose (4.1) attached to the water choke outlet (4.3) which is attached to the back of the cylinder head.
16. Loosen the hose clamp (4.2) and disconnect the hose. If the hose is difficult to remove, slice it lengthwise with a razor blade at the nipple. *If you must cut the hose off, try not to score the metal tube too deeply, or you may create a water leak that will be hard to fix later*



366-348_Instructions_Fig 4

17. Locate the hose (5.1) that runs from the carbon canister to the carb. You may find that the ends are rubber hose with a steel line in the middle (5.2). Disconnect it from the carb. Disconnect the hose at the canister (5.1) and cap the hose nipple on the canister with the 1/4" cap (5.3) provided in the kit. *The cap in the kit will not require the hose clamp you see here...*

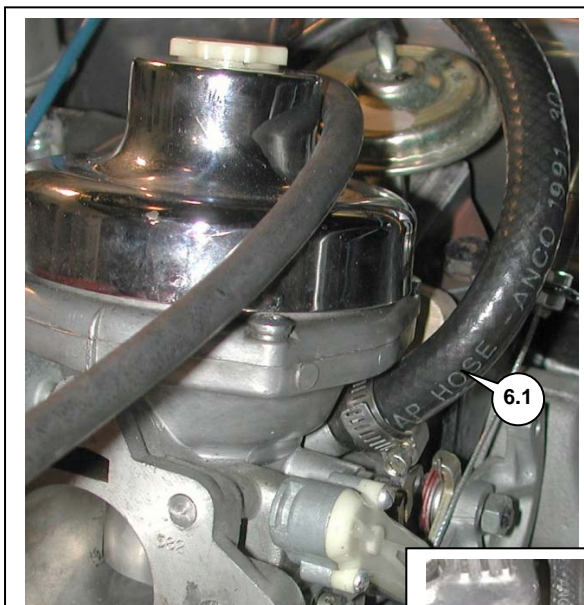


366-348_Instructions_Fig 5B



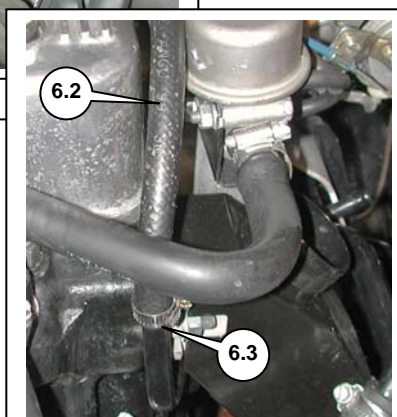
366-348_Instructions_Fig 5C

18. Locate the hose (6.1, 6.2) that runs from the carb to the crankcase vent pipe (6.3) on the front of the engine.
19. Loosen the hose clamp at the carb and disconnect the hose.



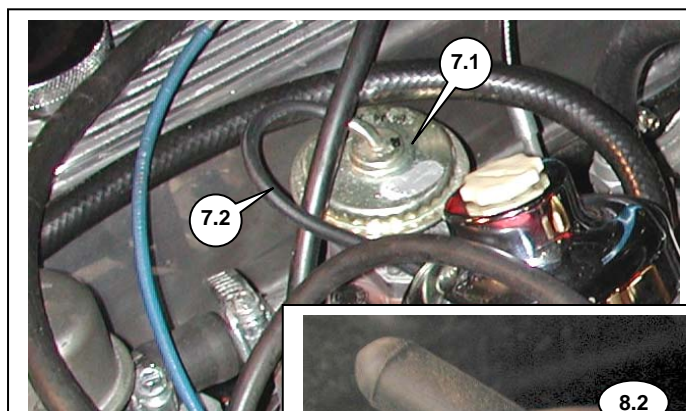
366-348_Instructions_Fig 6

20. Loosen the hose clamp at the crankcase vent pipe (6.3) and remove the hose. *This hose will be replaced by a new hose supplied in the kit.*

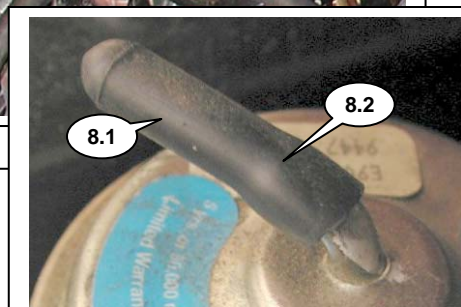


366-348_Instructions_Fig 6B

21. Locate the EGR valve actuator (7.1). Check the base of the EGR valve for any signs of a leak. *A leak here will affect how the car runs and will make tuning the car difficult. If there is any doubt, remove the valve and inspect the gasket. If there are signs of a leak, you must replace the 293-420 gasket. This gasket is not supplied in this kit.*
22. Disconnect the small hose (7.2) running from the carb to the actuator at the actuator.
23. Find the 5/32" vacuum cap (8.1) provided in the kit and cap the hose nipple on the actuator. Push the vacuum cap down over the nipple far enough to go over the flared section (8.2) of the nipple.

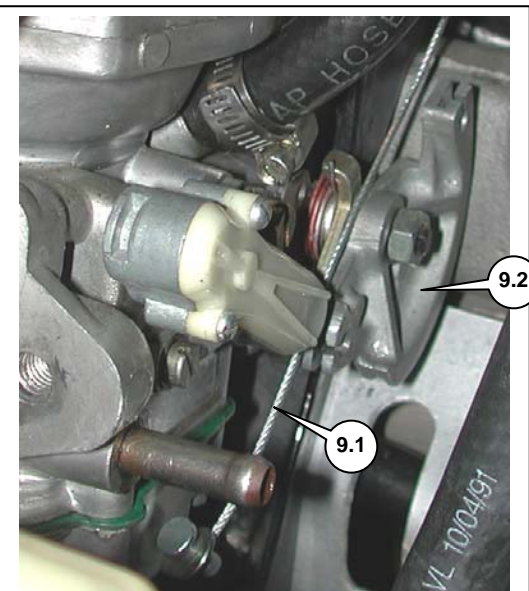


366-348 Inst Fig 7



366-348 Inst Fig 8

24. On the back of the carb, locate the throttle cable (9.1) and the bellcrank (9.2)
25. Disconnect the throttle cable (9.1) and let it hang loose as shown in Fig 9. *The throttle cable is secured to a bracket on the heat shield and that will be removed shortly.*

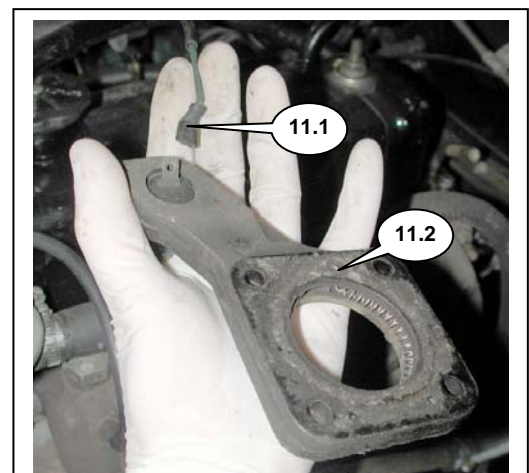


366-348 Inst Fig 9

26. Remove the four nuts that secure the carb to the intake manifold. *This is tedious because you will have to use an open end wrench and there is little room to move it.*
27. Once the four nuts are removed, grasp the carb and pull it away from the manifold. *If a sealer was used on the gasket the last time the carb was installed, you may have some trouble pulling the carb off the studs.*
28. Once the carb is loose, hold it upright because the float bowl is full of fuel.
29. Carefully empty the fuel into an approved container and set the carb aside. *Your old ZS carb should not be discarded; they are getting rarer all the time. Keep it or sell it to someone who's looking for one.*
30. Locate the carb spacer / heating element. (11.2)
31. Remove the green wire (11.1) and wrap the end with electrical tape; it will not be used anymore.
32. Plug the hole in the manifold with a shop rag to keep debris out of the engine.
33. Disconnect the throttle cable from the heat shield.

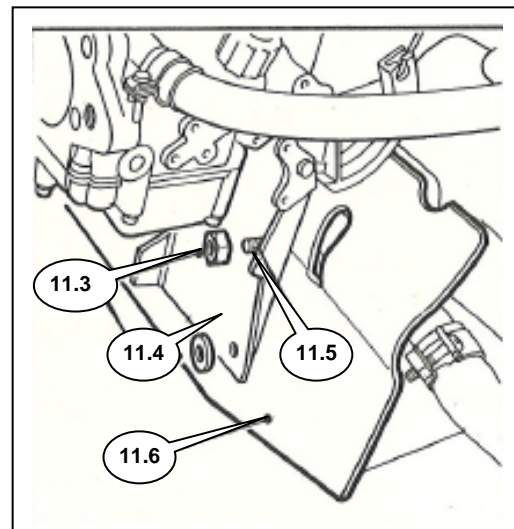


366-348 Inst Fig 10



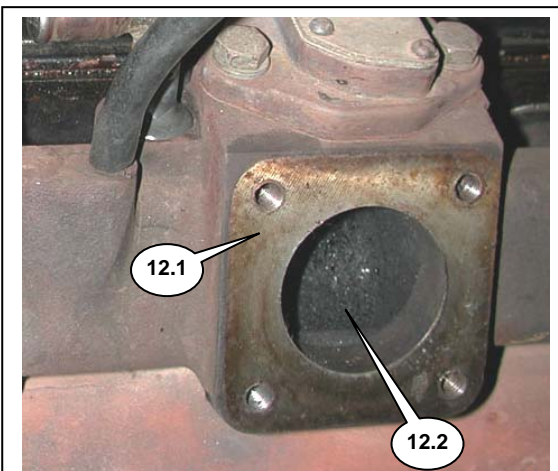
366-348 Inst Fig 11

34. Locate the nut (11.3) securing the heat shield bracket (11.4) to the stud (11.5) on the heater return pipe. Remove the nut and save it-we will need it later.
35. Remove the heat shield bracket (11.4) and the heat shield (11.6) by pulling it up and off the 4 carburetor studs and the stud (11.5) on the water pipe. Set it aside.



36. Remove the four studs that secured the carb to the manifold. Spray the studs with penetrating oil and let them soak. Double-nut the studs and unscrew them. If you have a stud puller, use it. Since these studs will be discarded, you may use vice grips if necessary. *If the studs won't budge at first, let the penetrating oil have a chance to soak in for 30 minutes and give it another try.*
37. Once the studs are out, scrape the surface (12.1) clean using a gasket scraper and/or single edge razor blades. Spraying some brake cleaner on the gasket residue will soften it, making it easier to scrape off. *Although missing in the picture, keep a rag stuffed into the hole in the manifold (12.2) to keep debris out. Be careful not to gouge the surface.*

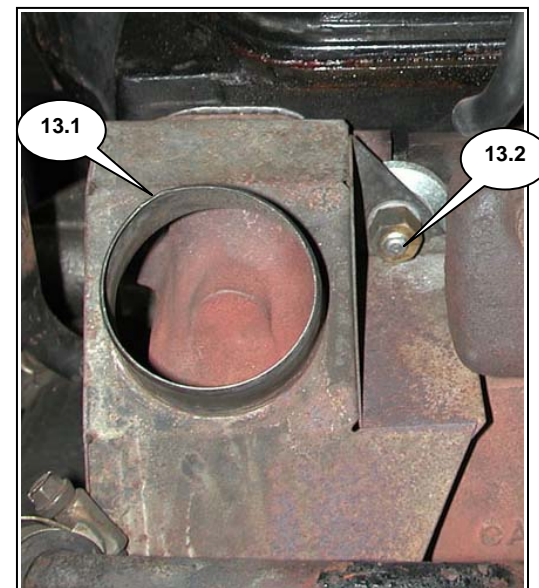
If you took your safety goggles off, put them back on before to do this step! We must clean out the threaded holes in the manifold because we will be using Loctite on the bolts that secure the throttle body, and the penetrating oil residue will prevent the Loctite from bonding with the metal.



366-348 Inst Fig 12

38. Spray brake cleaner into the holes while holding a rag over the hole and the nozzle of the can to catch the splash back.
39. Remove the heat riser. The heat riser (13.1) is secured using one on the manifold nuts (13.2). Remove the manifold nut using a ½" socket, extension and a ratchet.
40. Remove the heat riser and replace the manifold nut. Use the torque wrench and tighten the nut to 15 ft-lbs.

This concludes Part 2 of the installation.



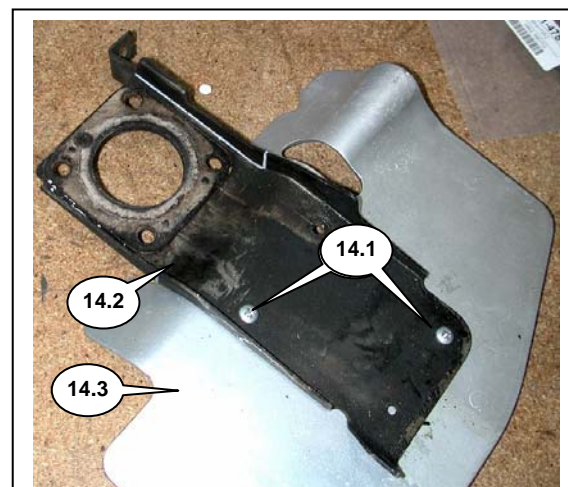
366-348 Inst Fig 13

Installation Part 3-Modification of the Heat Shield

*The heat shield will be modified and reinstalled with the fuel injection throttle body. Although it is possible run a car with the fuel injection system installed without the heat shield, the under-hood temperature will be quite high, and we **strongly** recommend against it.*

41. Remove the two Phillips head screws (14.1) that secure heat shield bracket (14.2) to the heat shield (14.3). *The screws will be re-used to re-attach the heat shield in a few minutes. If your heat shield is in bad shape, it can be replaced with a new one (14.3, Moss # 373-945) as we have done here.*

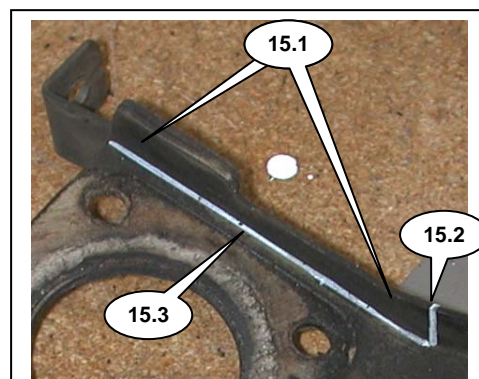
42. Examine the heat shield bracket (14.2).



366-348 Inst Fig 14

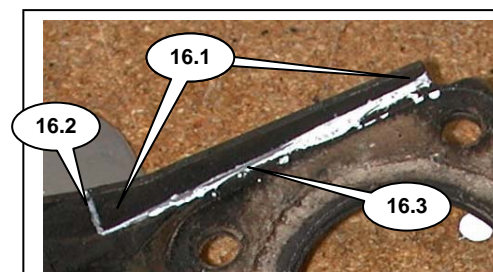
43. Locate the lip on the right side (15.1) and the lip on the left side (16.1) of the intake opening. This lip or flange must be partly removed from both sides in order for the throttle body to sit flat.

44. Measure down 3.5" from the top of the bracket and mark the bracket (15.2, 16.2) to indicate how much of the lip will be removed.



366-348 Inst Fig 15

45. Scribe a line along the 90 degree bend where the lip is formed (15.3, 16.3). *Although we used a white marker so it would show up in the picture, a pencil will work fine.*



366-348 Inst Fig 16

46. Cut the bracket to remove the 3.5" long section of the lip or flange from both sides (17.1, 17.2). You can make the cuts with a hacksaw. *You can also use a grinder, jig saw, or a Sawzall instead of a hacksaw.*
47. Lightly file the edges where both cuts were made to remove any burrs. *At this point you may want to repaint the bracket. Strip the rest of the paint, get rid of the rust, and then spray it with a good high temp automotive primer. Finish coat should be black.*
48. Reattach the modified bracket to the heat shield using the two original Phillips head screws.

This concludes Part 3 of the installation.



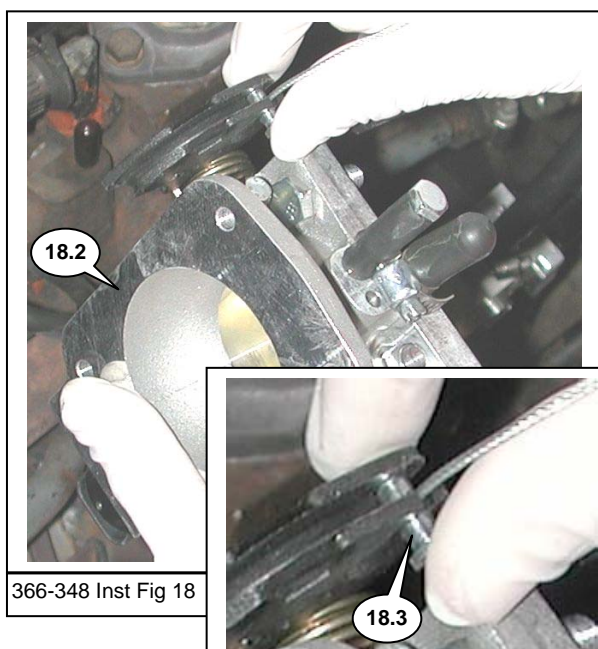
366-348 Inst Fig 17

Installation Part 4 - Fitting the Throttle Body

49. Pick up the throttle body. *Note that one of the four mounting bolts has already been installed, and the throttle stop was installed afterward. This effectively traps the bolt. NOTE: The throttle stop has been preset and the Electronic Control Unit (ECU) has been calibrated using this throttle stop. **UNDER NO CIRCUMSTANCE SHOULD YOU DISTURB OR ATTEMPT TO ADJUST THE THROTTLE STOP!***
50. We will test-fit the end of the throttle cable first. Look at the black plastic bell crank (18.1) on the throttle body and note that a hole has been drilled to accept the pin on the end of the throttle cable. Note also that a slot has been cut to allow the throttle cable to be pushed into the groove in the bell crank.
51. Hold the throttle body (18.2) in your left hand and use your thumb to push the pin on the end of the cable (18.3) into the hole in the bell crank. *Some cleanup of the hole or slot may be necessary to get a smooth fit.*
52. Work the cable through the groove so that the cable can wrap around the bellcrank.
53. Once the fit is satisfactory, remove the throttle cable (leaving it in the car) and return to the bench with the throttle body.
54. Find the other three 5/16-18 X 1" bolts included in the kit. Fit a second bolt to the throttle body so that both of the lower holes have a bolt (19.1).
55. Find the two square manifold gaskets for the throttle body (19.2).
56. Put a dab of tacky gasket cement (not provided) on the throttle body and place a square manifold gasket over the two lower bolts (19.1) with the tab (19.3) on the gasket "up". *The tacky gasket cement is used to hold the gasket in place, not to help the seal.*
57. Put a dab of tacky gasket cement on the modified heat shield assembly and place a second square manifold gasket over the four bolt holes in the heat shield. *The tacky gasket cement is used to hold the gasket in place, not to help the seal.*

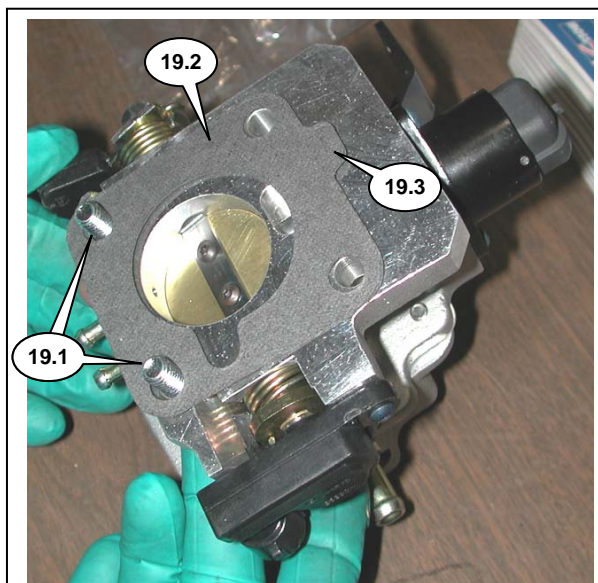


366-348 Inst Fig 18C



366-348 Inst Fig 18

366-348 Inst Fig 18D



366-348 Inst Fig 19

58. Hang the modified heat shield assembly in position, (with the gasket toward the manifold) using the stud on the water pipe to support the heat shield. The four bolt holes in the heat shield should line up with the four holes in the manifold. Replace the nut on the stud on the water pipe loosely- we just want to keep the heat shield assembly in position.
59. Apply a drop or two of blue Loctite to the threads of the two lower bolts. *The Loctite in the kit is in a small plastic tube. Cut off a corner to make a very small opening and squeeze a little Loctite on the threads. You only need a drop or two.*
60. Hold the throttle body with the throttle bell crank toward the rear of the car. Carefully position the throttle body in the engine compartment. You will have to hold the two lower bolts in place as you maneuver the assembly into position. (Fig 20)
61. Hold the throttle body up against the heat shield and thread the two lower bolts through the heat shield and into the threaded holes in the manifold, starting with the lower front bolt (the one on your left as you look at the throttle body).
62. Apply a drop or two of blue Loctite to the threads of the two upper bolts (5/16-18 X 1"). Thread them into place starting with the upper left bolt (20.1).
63. Once all four bolts are started, tighten them using a ½" open end wrench. They should be torqued to 18 ft-lbs. *There is no way to get a torque wrench in there, although you might get a crows-foot on a bolt. If you are not comfortable judging 18 ft-lbs, tighten a bolt you can get to 18 ft-lbs, then put a wrench on it to see what 18 ft-lbs feels like. This completes part 4 of the installation.*

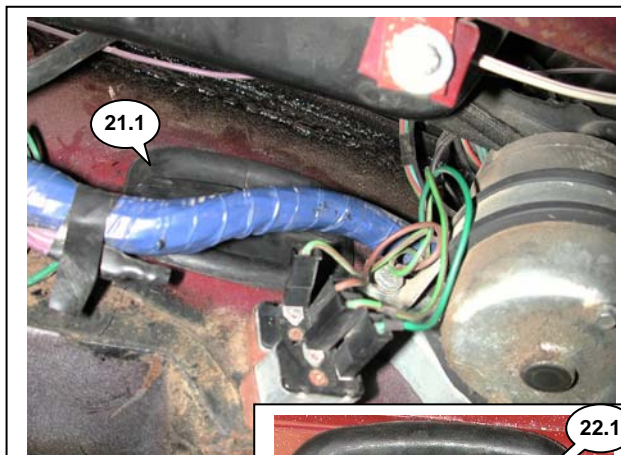


366-348 Inst Fig 20

Installation Part 5 - Laying the Harness in Place

The brain of the fuel injection system is the Electronic Control Unit, or ECU. This will live in the cockpit. The wiring for the kit consists of a single harness that starts in the cockpit and it has one branch with several molded plastic connectors that goes to the throttle body and one branch with no connectors that goes toward the coil and fuse box. A single red-white wire will go the new fuel pump we will install by the rear axle.

64. Remove the right hand (passenger's) under-dash panel if fitted; many have been removed or lost. If you look up at the back side of the firewall, you will see a rectangular rubber grommet (21.1). We are going to modify it so we can get the fuel injection harness into the cockpit.
65. Pop out the rectangular grommet (21.1) from the hole in the right side of the firewall.
66. Cut a 1" hole in the plug using a hole saw (22.1). Avoid the middle rib. Slice the grommet from the hole to the bottom edge of the grommet using a single edge razor blade. (22.2) *If you don't have a hole saw you can cut the hole with an Exacto knife, razor blade or punch.*

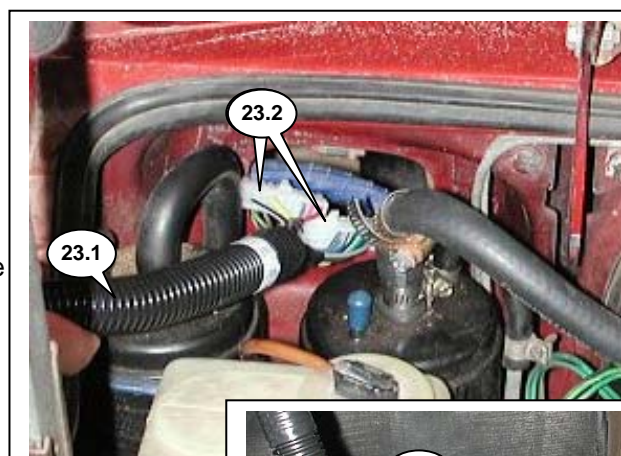


366-348 Inst Fig 21



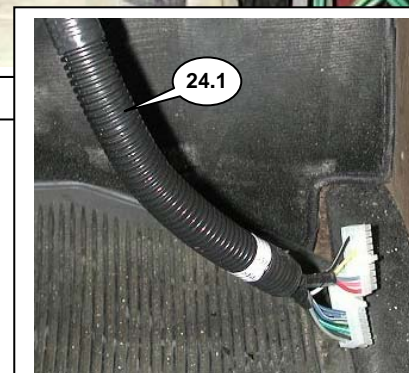
366-348 Inst Fig 22

67. Find the end of the wiring harness (23.1) with the two large rectangular white plastic connectors or plugs (23.2).
68. From the engine compartment, poke about 1 foot of the harness through the hole in the dash.



366-348 Inst Fig 23

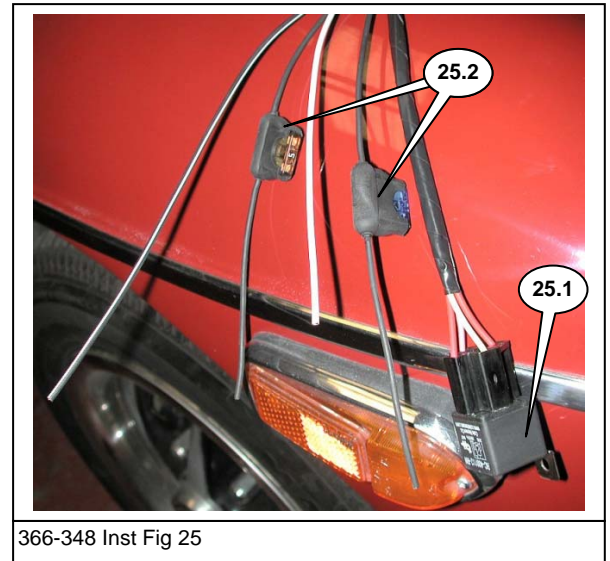
69. Leave the harness hanging in the footwell for now (24.1). We just want to make sure we have enough slack to reach the ECU when we install it later.



366-348 Inst Fig 24

70. Locate the branch of the harness that has the relay (25.1) and the inline fuse holders (25.2), and route it over to the right hand side of the engine compartment. *Although missing in this particular picture, we encourage the use of fender covers or towels to protect the paint.*

71. Locate the branch of the harness with the molded plastic connectors and carefully route it over toward the throttle body. Take your time, and run the harness under the heater hoses, behind vacuum lines and the stock wiring harness bundle.



72. There will be a bundle of red-white wire hanging down near the back of the engine. (see Fig 25C) This will provide power for the new fuel pump and we will deal with it when we run the fuel return hose.

This completes part 5 of the installation.



Installation Part 6 - Connecting the Harness to the Throttle Body

73. Locate the connector on the harness for the Idle Air Control Motor and plug it in. (26.1)

366-348 Inst Fig 26B



74. Locate the connector on the harness for the Fuel Injector and plug it in. (26.2)

366-348 Inst Fig 26C



75. Locate the connector on the harness for the Throttle Position Sensor (TPS) and plug it in. (26.3)



76. Each connector has clips that lock the connector in place; make sure these are engaged after you plug in the connector.

All three connectors are unique and there is no way to make a mistake plugging them in.

This completes part 6 of the installation.

366-348 Inst Fig 26

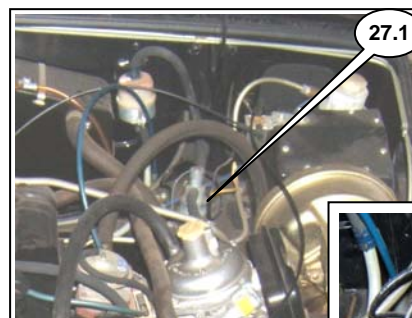
26.3



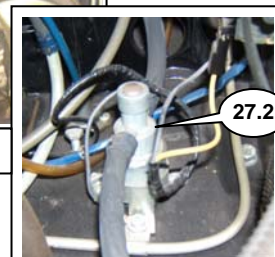
366-348 Inst Fig 26D

Installation Part 7 – Installing the Manifold Absolute Pressure (MAP) Sensor

The MAP sensor is a variable resistor used to monitor the difference between the pressure inside the intake manifold and normal atmospheric pressure outside the manifold. This information is used by the electronic Control Unit (ECU) to determine engine load. When the engine is under load, the computer will alter the fuel mixture to improve performance and reduce emissions. Before we get started we need to make a place for the MAP sensor. Some late MGBs came equipped with a mechanical fuel cut-off valve that sits on the firewall shelf near the pedal box and fuel filter. The valve (27.1, 27.2) is connected to the fuel hose between the fuel filter and the carb. These valves are prone to failure, and most of them have already been removed. If you have one, we suggest that you remove it along with the 2 pieces of hose attached to the valve.

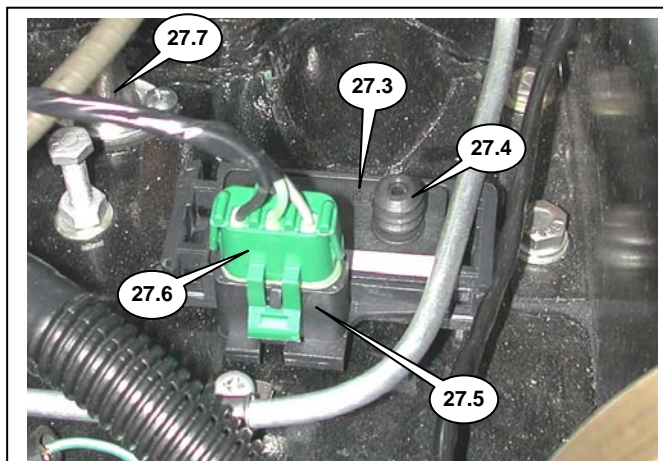


366-348 Inst Fig 27A



366-348 Inst Fig 27B

77. Locate separate bag that contains the Manifold Absolute Pressure (MAP) sensor. It is a small black plastic box (27.3) with a nipple for a vacuum hose (27.4) and a socket for a wiring connector (27.5).
78. Connect the harness plug (27.6) and position the MAP sensor so there is slack in the wires. It fits nicely on the firewall shelf near where the throttle cable guide is mounted (27.7).
79. There are two slots for screws at either end of the plastic box; the screws can be positioned anywhere in those slots. Mark the position of one of the screws.
80. Remove the MAP sensor and look under the dash in the cockpit- make sure there are no wires in the area- you are about to drill a couple of holes.
81. Center punch your mark and drill one hole using a 3/32" drill bit.
82. Find the two #6 x 1 1/4" sheet metal screws and the two #6 flat washers provided in the kit. Secure the MAP sensor to the firewall shelf using one screw and washer (28.1).
83. Using the MAP sensor as a guide, drill a second hole using a 3/32" drill bit and install the second screw and flat washer. (28.1) Do not over-tighten. *The flat washers were not used in the installation photographed- that's when we decided they were needed.*
84. Pull the rubber bellows/cover (see 27.2 on previous page) off the vacuum nipple, exposing the plastic hose barb (28.3).



366-348 Inst Fig 27C



366-348 Inst Fig 28

This completes part 7 of the installation.

Installation Part 8 - Engine Coolant Temperature (ECT) Sensor

85. Locate the factory water choke outlet at the left rear corner of the cylinder head. *When cars are converted to a manual choke, this outlet is sometimes removed. If yours is missing, you will need a Moss #470-245 water choke outlet because engine coolant must flow past the ECT in order for it to work properly.*

86. Remove the clamp (30.1) securing the choke coolant hose to the water choke outlet. Pull the hose off the tube. *You may want to take a moment and clean the area around the choke tube before you start the next step.*

87. Remove the two nuts (31.1) securing the water choke outlet to head using a 7/16" combination wrench. Remove and set the water choke outlet aside with the nuts. *They will be re-installed after we fit the engine coolant temperature sensor (ECT).*

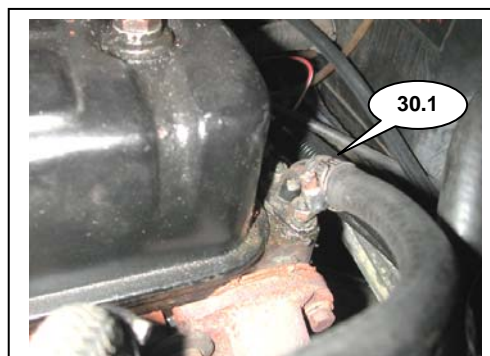
88. Remove the two studs (32.1) from the head. It will be necessary to double nut the studs or use a pair of vice grips to break them loose. (Fig 33, 34) Discard them; they will be replaced with longer studs supplied in the kit. *If the studs are very hard to move, try soaking them in penetrating oil for 30 minutes before you try and remove them.*

89. Clean the surface of the head thoroughly, removing any gasket material or sealant. Use a gasket scraper or a single edged razor blade. (Fig 35) Take care not to gouge the surface, which may cause a leak later. *It may be easier to remove the gasket and gasket residue if you spray it with brake cleaner and let it sit for awhile.*

90. When you are done, the surface should be clean and free of any debris that might prevent a good seal. (Fig 36)

If you took your safety goggles off, put them back on before to do this step!

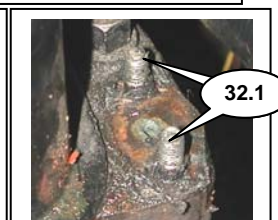
91. Spray brake cleaner into the holes for the studs while holding a rag over the hole and the nozzle of the can to catch the splash back.



366-348 Inst Fig 30



366-348 Inst Fig 31



366-348 Inst Fig 32



366-348 Inst Fig 33



366-348 Inst Fig 34



366-348 Inst Fig 35



366-348 Inst Fig 36

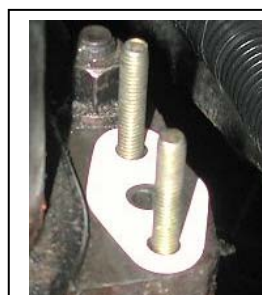
92. Locate the two 1/4-28 x 2" studs supplied in the kit.
93. Apply thread sealant (Permatex 54540 or equivalent) to the last 1/4 inch of each stud. (Fig 37)
94. Thread the ends of the studs with sealant into the holes at the back of the head. (Fig 38)
95. Locate the two water choke outlet gaskets (Moss p/n 295-040) supplied in the kit. *You may want to use a very thin layer of Hylomar or RTV on the gaskets when you install them*
96. Slide one gasket over the studs. (Fig 39)
97. Test fit the aluminum adaptor, the second gasket, and the water choke outlet. Make sure the studs extend above the head far enough to accept the lock washers and nuts. If not, unscrew them a turn or two. (Fig 39B)
98. Find the engine coolant temperature (ECT) sensor (Fig 40) supplied in the kit and the aluminum adaptor block it threads into (Fig 41). There should already be Teflon tape around the threads of the ECT (40.1). *If you ever replace this sensor, wrap Teflon tape around the threads before installation.*
99. Thread the ECT sensor into the ECT adapter block. (Fig 42) Just get it started. *We will tighten it after it is installed on the head.*
100. Slide the ECT adapter block over the two studs and down on top of the first choke tube gasket (Moss p/n 295-040). (Fig 43)
101. Slide the second water choke outlet gasket (Moss p/n 295-040) on top of the ECT adapter block. Place the water choke outlet on top of the gasket. (Fig 45)
102. Install the 1/4" lock washers (Moss 772-269) provided in the kit on the studs. Install the 1/4-28 nuts that you removed earlier onto each stud and torque them to 9 ft-lbs. (Fig 45).
103. Use a 3/4" combination wrench to tighten the sensor into the sensor block. (Fig 46) *It must be snug or you will find coolant weeping past the threads.*



366-348 Inst Fig 37



366-348 Inst Fig 38



366-348 Inst Fig 39



366-348 Inst Fig 39B



366-348 Inst Fig 40



366-348 Inst Fig 41



366-348 Inst Fig 42



366-348 Inst Fig 43

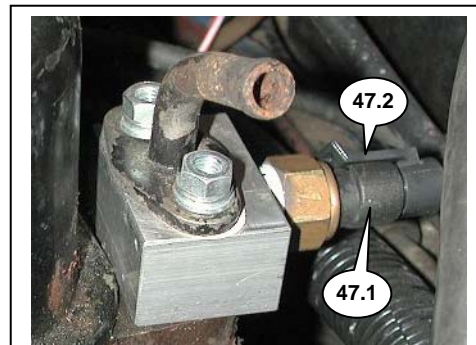


366-348 Inst Fig 45



366-348 Inst Fig 46

104. Find the fuel injection harness connector with the blue inner seal (47.1) Connect it to the to the ECT sensor. The clip on the connector (47.2) should snap into place.



366-348 Inst Fig 47

105. Locate the 22" long piece of 3/8" heater hose supplied in the kit (Moss #051-260). Slide a small hose clamp (supplied in kit) over the end of the hose and push the hose onto the water choke outlet and tighten the hose clamp.

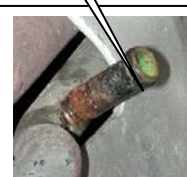


366-348 Inst Fig 48

106. Route the 3/8" hose (49.1) from the water choke outlet over the top of the throttle body (49.2) and down towards the nipple in the coolant hard line. (49.3). Remove the cap or plug on the nipple if present.



366-348 Inst Fig 49



366-348 Inst Fig 50

107. Slide a small hose clamp (supplied in kit) over the end of the 3/8" hose (51.1) and push the hose onto the nipple. Tighten the hose clamp.

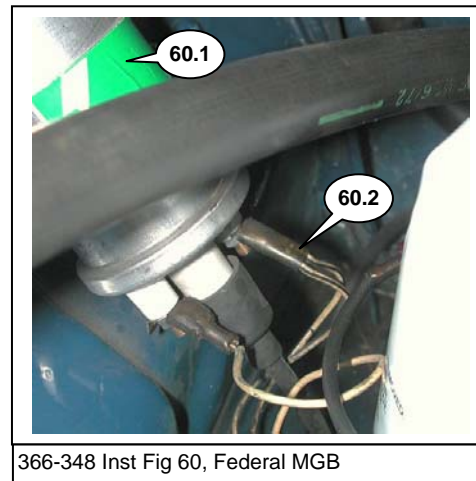
This completes part 8 of the installation.



366-348 Inst Fig 51

Installation Part 9- Tapping into the Tachometer Wire

108. If you have a "Federal" MGB (built for sale outside California) you should have a cylindrical barrel-type coil (60.1). Locate the two white w/black stripe wires attached to the negative side of the coil (60.2). Look at the coil; the negative side of the coil should be marked with a "-". One white w/black stripe wire goes to the distributor and the other goes to the tachometer. Both disappear into the wiring harness so it is hard to tell which is which.



366-348 Inst Fig 60, Federal MGB

109. If you have a "California" MGB you may still have the electronic ignition coil fitted that was part of the emissions control equipment (61.1). Find the two white w/black stripe wires (61.2) attached to the coil.

110. In either case, once you have located the two white w/black stripe wires, try to determine which of the wires runs to the tachometer. This may prove a challenge. Although we can tap into either wire, it is best to use the tachometer wire.



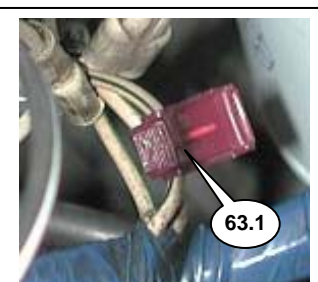
366-348 Inst Fig 61 1979 California MGB

111. Find the T-Taps supplied in the kit (Fig 62). *One the cars with a regular coil, you could put a #8 ring connector on the white wire and secure it to the negative terminal on the coil. On the cars with the electronic ignition coil, the wires disappear into the coil and you cannot do that- which is why we supply a t-tap in the kit.*

112. Place a T-tap on the white wire with a black stripe (white-black) that goes to the tachometer. (63.1) (Again, either wire will work).



366-348 Inst
Fig 62



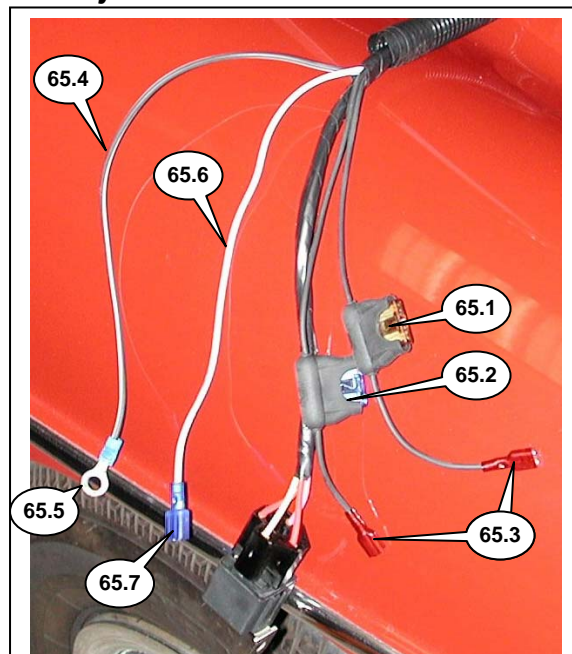
366-348 Inst Fig 63

This connection will provide a tachometer/RPM signal to the ECU while allowing the tachometer and distributor to continue to work normally. Note: If the wires are old, squeezing the T-tap may force the blade into the insulation without actually penetrating to the wire strands inside the insulation. After installing the T-tap, use an OHM meter to verify continuity between the female spade in the T-tap and white-black wire. On the Federal cars, check continuity to the negative terminal on the coil. On the California cars there is no visible negative terminal because the white-black wire disappears inside the coil. You will need to penetrate the wire with a sharp probe.

This completes part 9 of the installation.

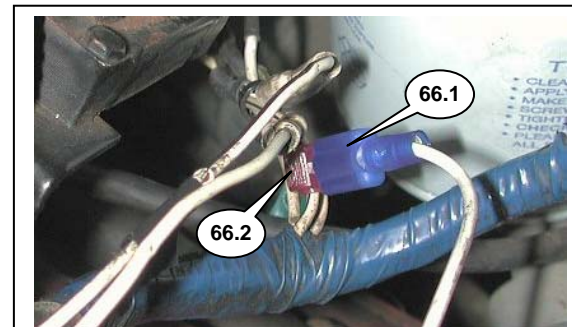
Installation Part 10- Terminating & Connecting the Fuel Injection Harness

113. Organize the various electrical connectors supplied in the kit.
114. Find the two black wires that have inline fuses (65.1, 65.2). These are the fuel injection harness power leads.
115. Strip the ends and crimp one female spade connector (65.3) onto each of these two wires. *Be sure to crimp these connections securely, as they are necessary for the car to run. Use proper wire crimpers. A poor connection on one of these wires will cause lots of trouble.*
116. Find the black wire w/white stripe (65.4). Strip the insulation off the end and crimp a ring connector with a 1/4" hole (supplied in kit) onto the wire. (65.5)
117. Find the solid white wire (65.6). Strip the insulation off the end and crimp a male spade connector onto the wire (65.7).



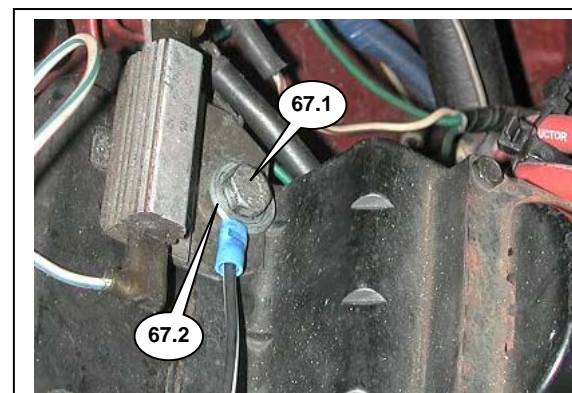
366-348 Inst Fig 65

118. Connect the male spade connector (66.1) on the fuel injection harness' white wire to the t-tap (66.2) that is crimped onto one of the white w/black tracer wires leading to the negative side of the ignition coil. *The white wire feeds the ECU the same signal the tachometer sees; the white wire tells the ECU the engine RPM. This signal is critical. Check the continuity between the negative terminal on the coil and the white wire. Use a probe to penetrate the insulation if necessary.*



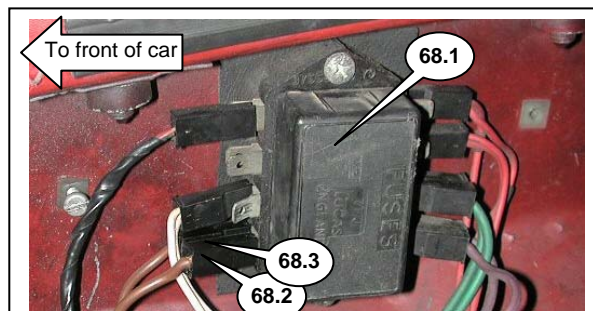
366-348 Inst Fig 66 1979 California MGB

119. Find the black wire with white stripe with the ring connector with a 1/4" hole on the end. (See 65.5 above)
120. Using a 7/16" socket, remove one of the bolts (67.1) securing the ignition coil bracket. (80 MGB Shown)
121. Slide the ring connector (67.2) onto the coil bracket retaining bolt under the washer and retighten the bolt. *Putting the ring connector under the washer will prevent the connector and wire from being spun around as you tighten the bolt.*



366-348 Inst Fig 67 1979 California MGB

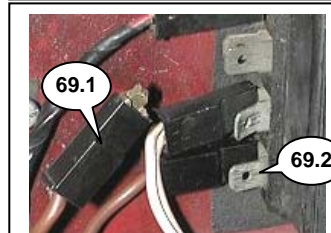
122. The fuse block (68.1) is secured to the right inner fenderwell. Look at the side of the fuse block closest to the front of the car. Locate the two brown wires with female spade connectors (68.2, 68.3) connected side by side on the lowest pair of male spade terminals. These two male spade terminals are +12V Constant (powered all the time) and the position on the fuse box is labeled "7".



366-348 Inst Fig 68

123. Disconnect the "outside" female spade connector (69.1), which will expose the "outside" male spade terminal on the fuse block (69.2)

124. Find the female spade to twin-male spade "piggyback" connector supplied in the kit. (Fig 70, Moss 772-271)



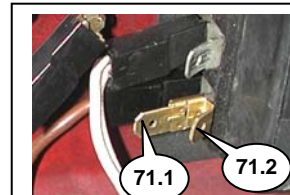
366-348 Inst Fig 69



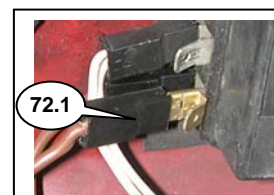
366-348 Inst Fig 70

125. Slide the "piggyback" connector onto the male spade you have just exposed. (69.2 above) Note that the longer of the two spades (71.1) points straight forward, and the shorter spade (71.2) is angled toward the engine compartment a little.

126. Re-connect the factory female spade connector removed earlier (72.1) onto the longer male spade of the new piggyback connector.



366-348 Inst Fig 71

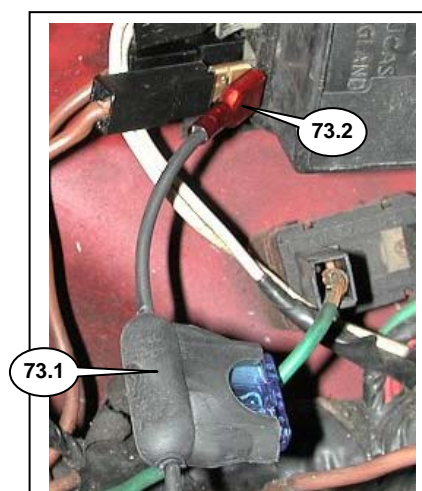


366-348 Inst Fig 72

127. Find the black wire with the blue 15 Amp inline fuse (73.1) coming out of the fuel injection harness. *Both wires with inline fuses are black. It is the fuse that allows us to tell them apart until the holder is marked.*

128. Use the "Sharpie" marker to label the fuse holder "15". *By marking the fuse holder, we can tell the black wires apart even if the fuses are removed.*

129. Connect the female spade connector (73.2) to the angled male spade of the piggyback connector.



366-348 Inst Fig 73

130. There is another pair of male spade terminals on the fuse block immediately above the wires you just connected. This position is labeled “5”. While the outermost spade (74.1) is available on **some** MGBs, and we know that it is used on the 80 MGB. This means that the piggyback procedure we just went through (see above) may have to be repeated on your car. A second female spade to twin-male spade “piggyback” connector (Moss 772-271) is supplied in the kit for this reason.

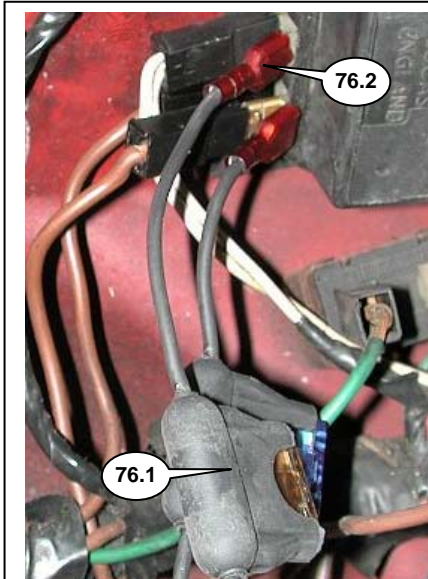


366-348 Inst Fig 74

131. Find the black wire with the brown 5 Amp inline fuse (76.1) coming out of the fuel injection harness. *Both wires with inline fuses are black. It is the fuse that allows us to tell them apart until the holder is marked.*

132. Use the “Sharpie” black felt tip marker to label this fuse holder “5”. *By marking the fuse holder, we can tell the black wires apart even if the fuses are removed.*

133. Connect the female spade connector (76.2) to the open male spade on the fuse block (see 74.1 above). *Again, if necessary, the piggyback procedure we just went through (see above) will have to be repeated.*



366-348 Inst Fig 76

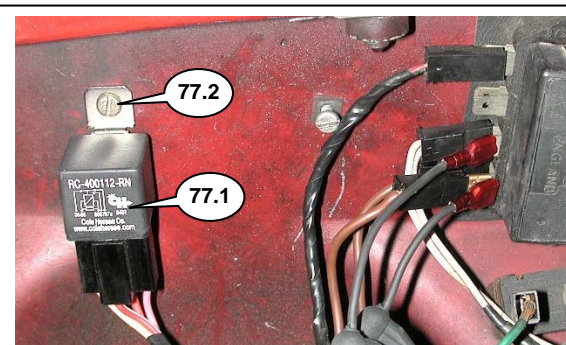
134. Find the group of wires in the fuel injection harness that are connected to the relay (77.1).

135. Secure the relay. You may use a spare screw (77.2) found on the inner fender well as shown in Fig 77. If a screw is not available, you may zip tie the metal relay mounting plate to a convenient wiring bundle. Use a location where the wires going to the relay are not under any strain.

136. Find the supply of zip-ties supplied in the kit.

137. Loosely zip-tie the harness to secure it as you pick the routing to protect the harness from being crushed, melted, cut or abraded.

138. Feed any slack in the harness through the hole in the firewall where the rectangular rubber plug was removed.



366-348 Inst Fig 77

This completes part 10 of the installation

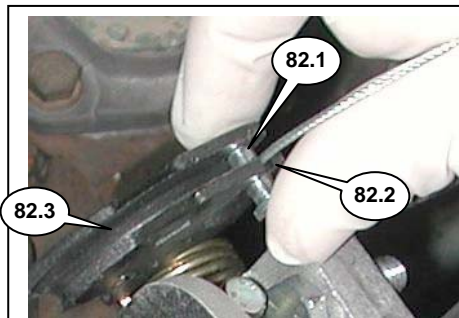
Installation Part 11- Connecting the Throttle Cable

139. Route the throttle cable over the harness and over the vacuum line for the brake booster.



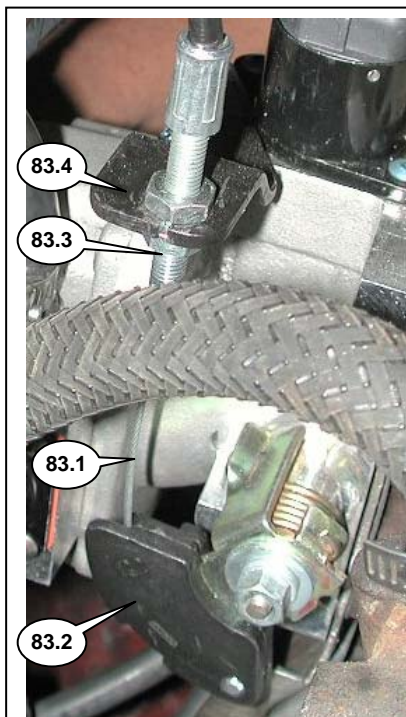
366-348 Inst Fig 80

140. Push the cylindrical end (82.1) at the tip of the throttle cable into the hole in the throttle cable bellcrank. You will need to guide the cable through the slot (82.1) and into the V-channel (82.3) of the bellcrank arm. *We removed the throttle body to take the picture; you will attach the cable with the throttle body mounted, which is why we test fit the cable earlier.*



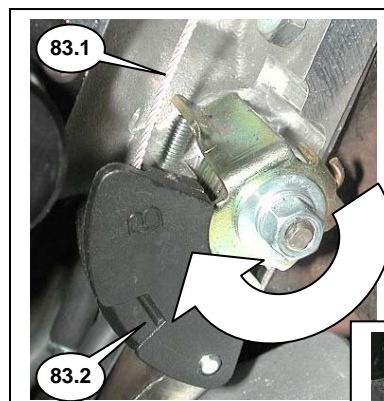
366-348 Inst Fig 82

141. Once the cable (83.1) is attached to the bellcrank (83.2), we need to get the adjustable end of the cable (83.3) into the bracket on the throttle body (83.4). *This requires a little explanation using a picture of what it will look like when we are done. There is a slot in the bracket just wide enough for the cable. With the cable attached to the bellcrank, there is not enough slack to get the cable through the slot. We are going to "open the throttle" to get the slack we need.*



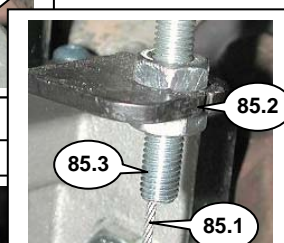
366-348 Inst Fig 83

142. Pull up on the cable (83.1) while rotating the bellcrank (83.2) to open the throttle. *This will provide enough slack to slide the cable through the slot in the bracket.*



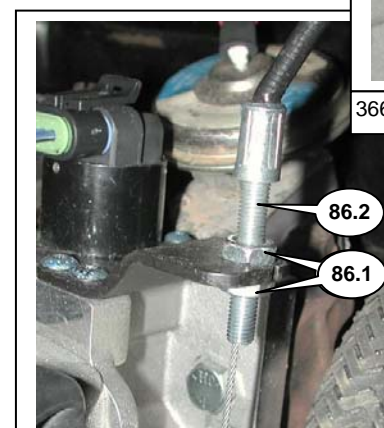
366-348 Inst Fig 84

143. Slide the cable (85.1) through the slot in the bracket (85.2), then lower the threaded end of the throttle cable housing (85.3) down through the hole in the bracket as you release the tension on the throttle cable.



366-348 Inst Fig 85

144. With the throttle closed, adjust the jam nuts (86.1) on the threaded end of the cable housing until the inner cable is taut. There will be about 3/8" inch of thread showing (86.2) above the upper jam nut. **Do not adjust the throttle stop.** *It is very important that the cable is taut and the throttle is closed. If this is not done correctly, you will have problems later.*

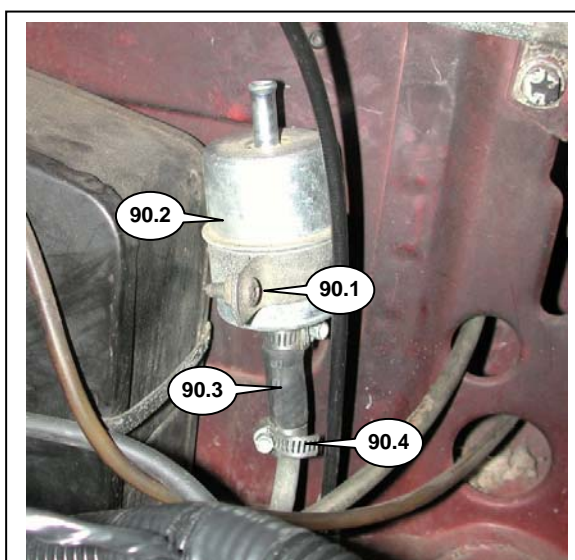


366-348 Inst Fig 86

This completes part 11 of the installation

Installation Part 12- Installing the Fuel Filter & Hose

145. Locate the fuel filter, 3" piece of 1/4" fuel hose, 32" piece of 5/16" fuel; hose and appropriate hose clamps supplied in the kit.
146. Loosen the screw in the fuel filter clamp (90.1).
147. Loosen the hose clamp securing the hose to the bottom nipple on the filter.
148. Remove the fuel filter (90.2).
149. Replace the short section of hose (90.3) from the hard line to the fuel filter with the 3" piece of 1/4" ID fuel hose included in the kit (Moss p/n 376-955).
150. Install the new fuel filter included in the kit. (Moss p/n 377-310). *Depending on the clamp used by the factory, the new filter may be loose in the clamp; a small piece of rubber between the clamp and the filter will solve that problem.*
151. Secure the hose (90.3) to the fuel pipe and to the filter using the band type hose clamps (90.4) included in the kit. *The spring-type clamps commonly used for fuel lines are not strong enough to resist the pressure generated by the fuel pump included in the kit.*

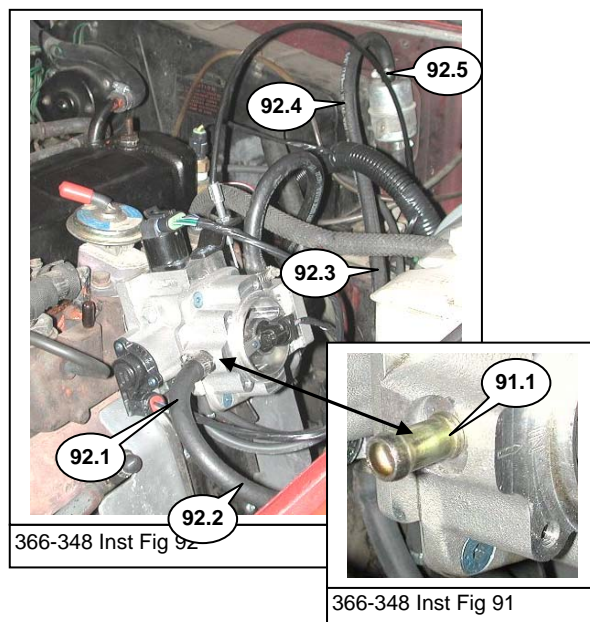


366-348 Inst Fig 90

Part 12 continued

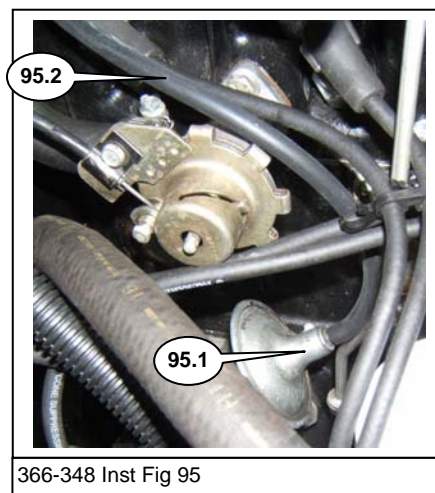
152. Slide a small hose clamp on each end of the 32" piece of 5/16" fuel hose included in the kit. A small amount of petroleum jelly will make it easier to push the hose onto the nipples.
153. Push the hose onto the "IN" nipple (91.1) on the throttle body.
154. Run the hose in an arc (92.1, 92.2, and 92.3) and push the hose onto the fuel filter nipple. Tighten the hose clamps.

This completes part 12 of the installation



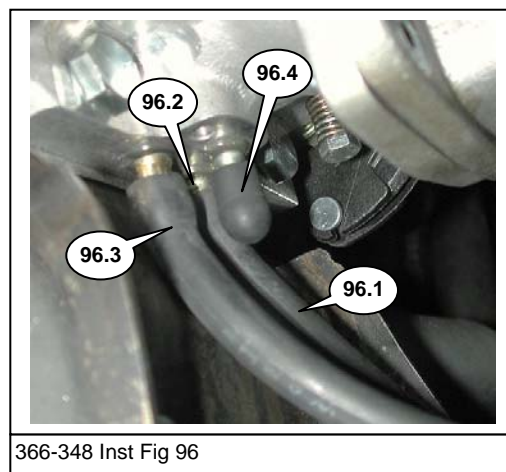
Installation Part 13- Vacuum Connection, Distributor to Throttle Body

155. Remove any existing hose connected to the distributor vacuum advance.
156. Find the 40" length of 5/32" ID vacuum hose supplied in the kit. There is a 30" piece as well- make sure you get the right one.
157. Connect the hose to the distributor vacuum advance (95.1).
158. Run the hose (95.2) under the AIR injection rail (95.3) around the back of the cylinder head (95.4).



159. Connect the hose (96.1) DIRECTLY to the lower right nipple on the bottom of the throttle body (96.2), bypassing the transmission control spark advance solenoid valve. *The nipple is very hard to see in this picture because the hose (96.3) that goes to the MAP sensor is in the way. It would not be connected at this point; we will actually connect it in the next step. Note also that the nipple that has been capped off (96.4) is no longer fitted to the throttle body so you will probably not see one. If you have a car w/o vacuum advance, be sure you cap the 5/32 nipple (96.2) on the bottom of the throttle body or your idle will be very high on startup. A 5/32" vacuum cap is provided in the kit for this purpose.*

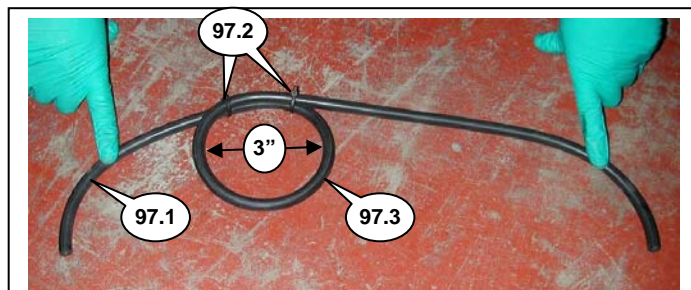
This completes part 13 of the installation



Installation Part 14- Vacuum Connection, MAP Sensor to Throttle Body

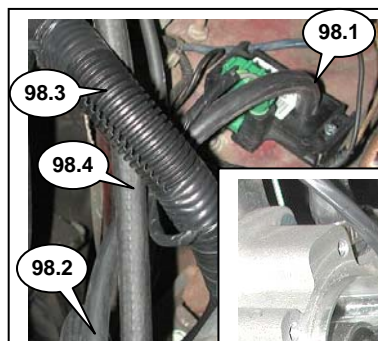
160. Find the 30" length of 5/32" vacuum hose supplied in the kit.
161. Form it into a loop 3" in diameter at one end with 6" of hose (97.1) beyond the loop.
162. Use two zip ties (97.2) to secure the loop.

We are going to install this so that the loop (97.3) is the lowest section of the hose.



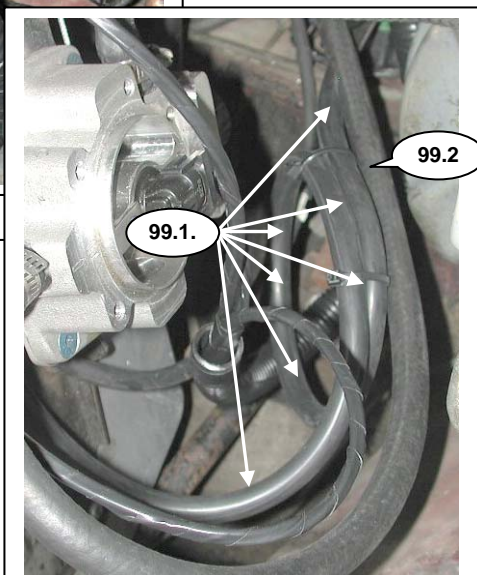
366-348 Inst Fig 97

163. Hold the hose so the loop hangs down, as it is in Fig 97.
164. Grab the end closest to the loop (97.1). Push it onto the hose barb on the MAP sensor (98.1). *This is a tight fit and you will need to work the hose onto the barb.*
165. Route the hose (98.1, 98.2) under the harness (98.3) and under the brake booster hose (98.4).



366-348 Inst Fig 98

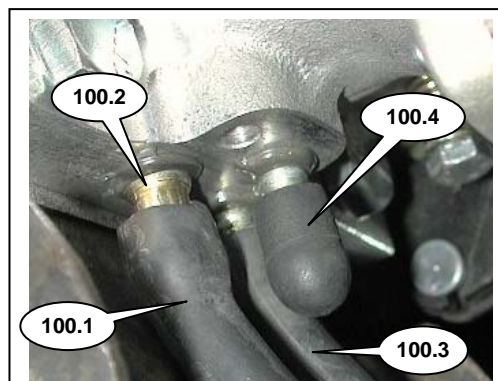
166. Arrange the hose so it runs past the throttle body along the inner fender well (99.1). In this example, the hose follows the Fuel hose (99.2). Note the orientation of the loop- it hangs down in relation to both ends of the hose. *The catalytic converter is on this side of the engine. Use zip ties to secure the hoses as far away from the exhaust system as possible.*



366-348 Inst Fig 99

167. Connect the hose from the MAP sensor (100.1) to the lower left nipple on the bottom of the throttle body (100.2). *The other hose (100.3) runs to the distributor advance mechanism; we connected it in the step just before this one. Note that the nipple that has been capped (100.4) off is no longer fitted to the throttle body we use, so you probably will not see any fitting in this location.*

This completes Part 14 of the installation



366-348 Inst Fig 100

Installation Part 15- Air Intake & Filter

168. Find the air intake, air filter, and the SAE40 band-type hose clamp for the air filter provided in the kit. *The manufacturer has discontinued the orange air filter; the filter in the kit will be blue or black.*

169. Slide the 2.5" conical air filter and a SAE 40 hose clamp onto the air intake housing. *Note that the screw on the clamp is on the side of the housing. It is easier to get to it when it is in this position.*



366-348 Inst Fig 105

170. Find the 28" long piece of 5/8" PCV-rated hose supplied in the kit.

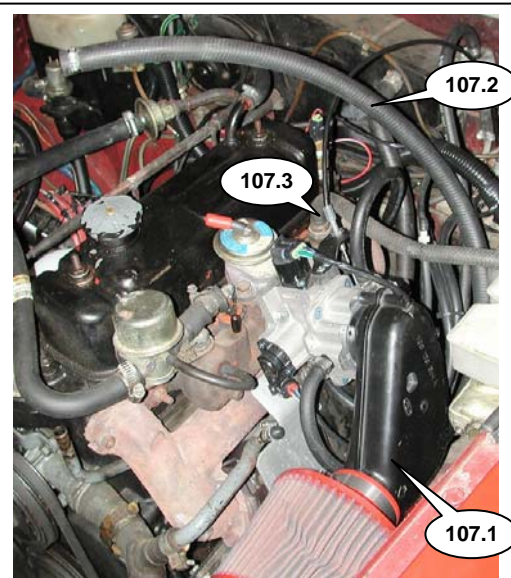
171. Slide the hose (106.1) onto the nipple on the air intake housing opposite the air filter hole. It is a very tight fit, and we do not need a hose clamp here.



366-348 Inst Fig 106

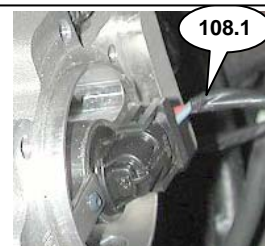
172. Slide the air filter and air intake housing (107.1) with the hose attached into position. *The air filter should not touch the inner fender well.*

173. Route the 5/8" hose (107.2) behind, up and around the vacuum hose for the brake booster (107.3). Leave the loose end be for the time being.



366-348 Inst Fig 107

174. Before going any further, make sure the wires from the fuel injector on the throttle body (108.1) go through the slot cut in the air intake housing (109.1). *This is IMPORTANT: Make absolutely sure that the wires are in this slot and not crimped between the throttle body and air intake housing.*



366-348 Inst Fig 108



366-348 Inst Fig 109

175. Find the three 2 3/8" long Allen head bolts for the air intake housing and the packet of blue Loctite, all of which are supplied in the kit.

176. Test fit all the mounting bolts in the throttle body before opening the Loctite. Start with the lower rear bolt (110.1). You may find it necessary to insert at least this bolt into the air intake housing before you slide the air filter/housing into place. Get this bolt started, then start the other two (110.2, 100.3). *If you have any trouble getting the bolt to start, DO NOT FORCE THEM! You are threading into aluminum, and you can ruin the throttle body by being impatient. If necessary, remove the housing and test fit the bolts in the holes one at a time.*

177. Once you have verified that all will start, remove them and put a little Loctite on the threads of each bolt

178. Start with the lower rear bolt (110.1). Get this bolt started, then start the other two (110.2, 100.3) Tighten the screws with a 5mm Allen wrench. (Fig 111) DO NOT over tighten or the intake housing will crack.

179. Move to the front of the engine.

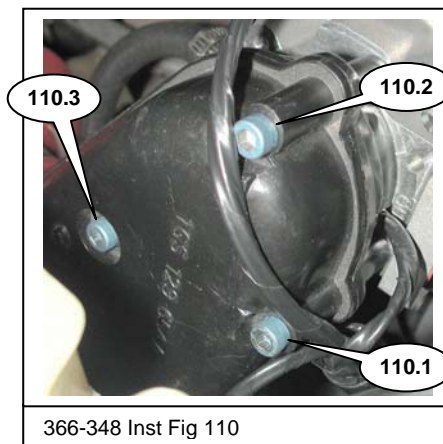
180. We left one end of the 5/8" hose attached to the air intake housing loose. Route the loose end of the hose (112.2) behind the gulp valve-to-air pump hose (112.3).

181. Slide on a medium-sized hose clamp (112.4), and slip the hose over the crankcase ventilation tube (112.1).

182. Tighten the hose clamp (112.4).

183. Tighten the hose clamp (115.1) securing the air filter to the air intake assembly. *Make sure the nut on the clamp winds up in a position that can be reached with the air intake assembly in place.*

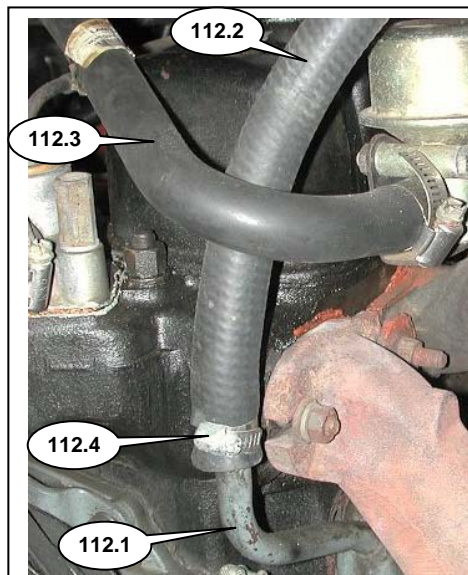
This complete part 15 of the installation



366-348 Inst Fig 110



366-348 Inst Fig 111



366-348 Inst Fig 112



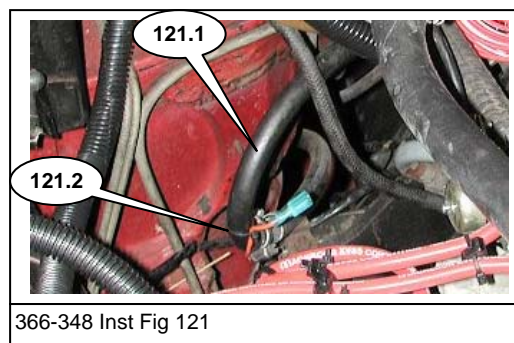
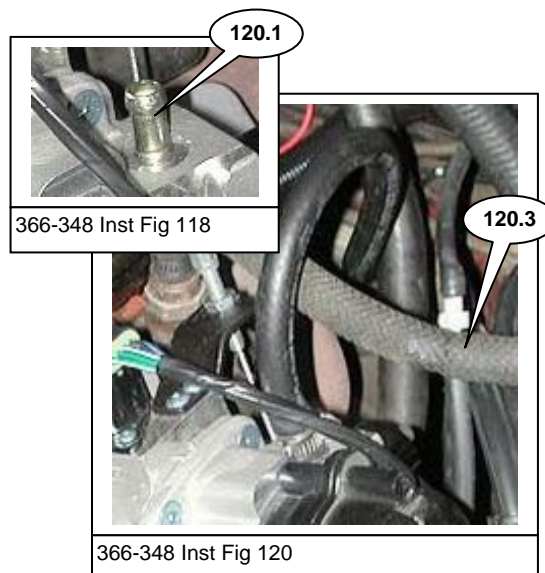
366-348 Inst Fig 115

Installation Part 16 - Fuel Return Hose

Fuel injection systems use a high pressure fuel pump, which maintains pressure at the injector. To do so, fuel is constantly circulating from the tank to the throttle body and back again. We are going to install the fuel return line.

184. Find the OUT nipple (120.1) on the throttle body. It is toward the rear of the throttle body, and it points up.
185. Find the large coil (150" approx) of 5/16" fuel hose and suitable hose clamps supplied in the kit.
186. Slip a hose clamp on the hose, and then connect the hose (120.2) to the OUT nipple on the throttle body. Tighten the clamp.
187. Route the fuel hose (120.1) up over the hose to the brake booster (120.3), then down behind the throttle body and across the rear of the engine compartment. The fuel hose must go behind and under the heater hose (important) as it is routed toward the right hand side of the engine compartment behind the engine block. Finally, it will go down and out of the engine compartment (121.1).
188. Zip tie the fuel line to the harness behind the engine block in a couple of places to make sure it will not rub on anything (121.2). Because this is a high pressure fuel hose, take your time and make sure that it will not be rubbing against any sharp corners or rough edges.

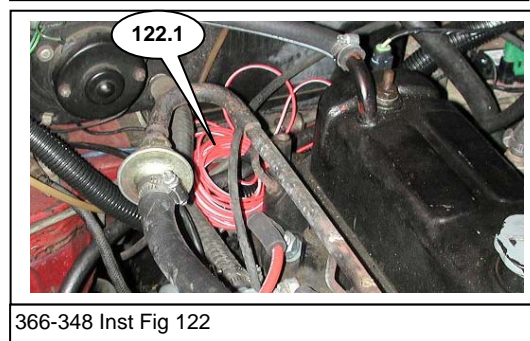
This completes part 16 of the installation



Installation Part 16.5 - Fuel Pump Inertia Switch

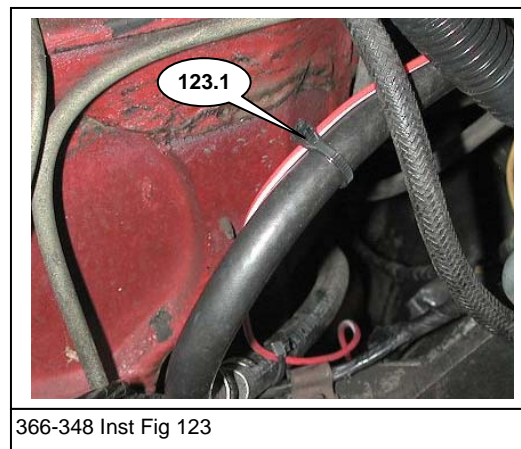
A working inertia switch will cut power to the fuel pump in the event of a collision. Even though the ECU will turn off the fuel pump 3 seconds after the engine stops running, we strongly recommend that you run the fuel pump power through the switch. If your switch is not working and it does not reset when you push the button on the top, we strongly suggest you obtain a replacement switch (Moss 900-240).

189. Locate and open the inertia switch wiring kit included in the EFI kit (bag labeled 772-377).
190. Find the coil of red wire with the white stripe (red-white) that is part of the fuel injection harness (122.1).
191. Cut the red-white wire 12" from the point where it comes out of the harness. Two inches from the ends, zip tie the two red-white wires together. Strip both ends and crimp a butt connector on each one.
192. Find the 140 inch long piece of red wire included in the wiring kit. Strip both ends and join the red wire to the red-white wire using the butt connectors.
193. Feed the loop of red wire through the hole in the firewall (122.2) into the cockpit.



194. In the right footwell: pull the two red wires into the cockpit and route them behind the dash and over to the driver's side of the car.
195. Locate the Fuel pump Inertia switch (Fig 122B) up under the dash on the driver's side. *The switch has two male spade terminals. There will be two white wires in a single black plastic connector on one side, and one white wire in a black connector on the other.*
196. Make a jumper wire from the 2 inch piece of white wire and the two male spade connectors included in the inertia switch wiring kit. *It will be necessary to pull the blue plastic insulation off the male spade connector. Wrap a small piece of electrical tape around the exposed metal shank of the male spade connectors.*
197. Pull both black plastic connectors off the terminals on the inertia switch. Connect the two white wires to the single white wire with the jumper wire you just made. *The white wires provide power to the overdrive electrics in addition to the original fuel pump. The fuel pump wire in the trunk has been taped off and will not be used. There is no reason why the overdrive electrics need to be shut off in the event of a collision. It was just convenient for the factory to do it this way. To provide power to the overdrive electrics, we are bypassing the inertia switch.*
198. Back in the engine compartment. Run the loose end of the red-white wire down and out of the engine compartment, following the fuel hose we just ran.
199. Zip-tie the wire to the hose to keep them together & to make it neat. (123.1)

This completes part 16.5 of the installation



Installation Part 17 – Removing the Stock Fuel Pump

For this part of the installation, the car needs to be jacked up and supported on proper automotive jack stands on a solid, level surface. You will be working underneath the car and the car must be stable.

200. Remove everything that is loose from the trunk.

201. In the forward bulkhead of the trunk, to the right of the area where the spare tire is kept, there is a square metal box (128.1) that covers the stock S.U. fuel pump.

202. Remove the two ¼-28 Phillips screws and the cover to expose the end of the S.U. pump. Save the screws. We will need one later to plug one of the threaded holes.

203. Disconnect and wrap the electrical power connector for the original fuel pump (128.2) with black electrical tape so it cannot short out, then zip-tie it out of the way. It will not be used.

204. Loosen the clamp (128.3) around the large rubber “donut” or grommet (128.4) that holds the pump in place.

205. Now, from underneath the car, remove the ground wire (129.3) for the pump and tie it up out of the way.

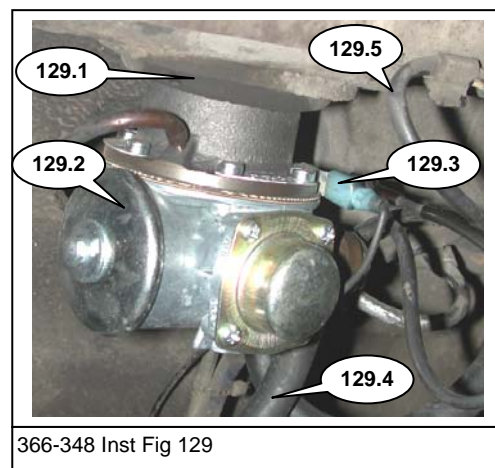
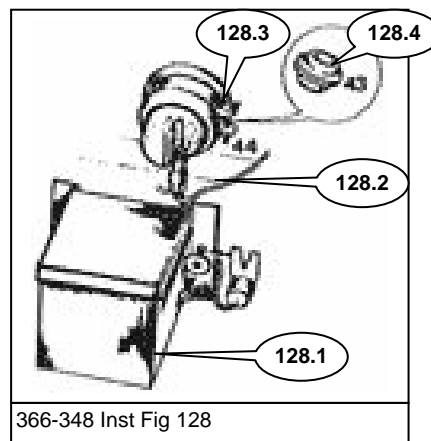
206. Remove any of the vent tubing attached to the pump.

207. Disconnect the fuel lines from the pump (129.4).
Caution! There will be gas in the lines even if the tank has been drained! Be prepared to catch the spill; all usual precautions applicable to working with fuel should be observed.

208. While you are underneath, remove the original fuel pump by pulling it through the “donut”.

209. Back inside the trunk: Remove the rubber “donut” from the hole in the trunk bulkhead.

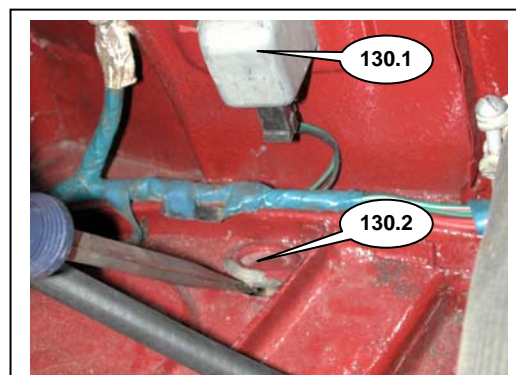
This completes part 17 of the installation



Installation Part 18 – Fuel Return Hose & Pump Power Wire

210. In the right rear corner of the trunk, directly below the right reverse lamp assembly (130.1), there is a white plastic plug in the floor of the trunk. (130.2)

211. Using a flat bladed screwdriver, gently pry the plug out. Set it aside- we are going to use it later. We are going to bring the fuel return line from the fuel injection throttle body into the trunk through this hole, using the plug as a grommet to protect the hose.



366-348 Inst Fig 130

212. Under the car:

213. Run the fuel return hose (that is connected to the "OUT" nipple at the throttle body) and the red wire with white stripe along the bottom of the car and back towards the axle/battery box area, zip tying them to the existing fuel hard line and brake lines. (Fig 132)



366-348 Inst Fig 132

214. When you get to the crossmembers, run the hose and the wire over the crossmember rather than under. (Fig 133) Remember not to pinch them if the crossmember is removed and reinstalled later.



366-348 Inst Fig 133

215. Route the fuel return line with the attached wire up the side of the battery box (Fig 137), then over the axle and to the hole in the trunk floor where we popped out the plastic plug.

216. Cut or punch a smooth hole in the plastic plug large enough for the fuel hose. We have turned the plug into a grommet, which will protect the fuel hose.



366-348 Inst Fig 137

Part 18, continued

217. Replace the plastic plug/grommet in the hole in the trunk floor and push the hose through the hole in the plug and into the trunk. (Fig 138)

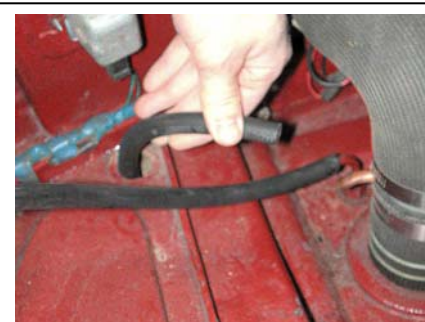


366-348 Inst Fig 138

218. From inside the trunk, pull the hose until you have taken up most of the slack. (figure 139)

219. Go back over the route of the hose, adjusting it as needed to relieve stress and to route the hose around sharp edges or other hazards. Zip-tie the hose to the hard lines and/or other hoses where appropriate. From inside the trunk, pull in any remaining slack if necessary. This is as much as we can do with this hose at this time.

This completes part 18 of the installation



366-348 Inst Fig 139

Installation Part 19 – Connecting the High Pressure Fuel Pump

220. Find the following:
one high pressure pump
four small hose clamps
a 36 inch length of 5/16" fuel hose
a 24 inch length of 5/16" fuel hose
All of these are in the kit.

221. Examine the pump. One end (165.1) has electrical connectors. The other end (165.2) does not. The hose fittings have already been installed, and you will see Teflon tape on the threads of the fittings. *For the next several steps, we will be working with the fuel pump suspended or hanging underneath the car because we have found that once mounted, it is very hard to get to the pump.*



366-348 Inst Fig 165

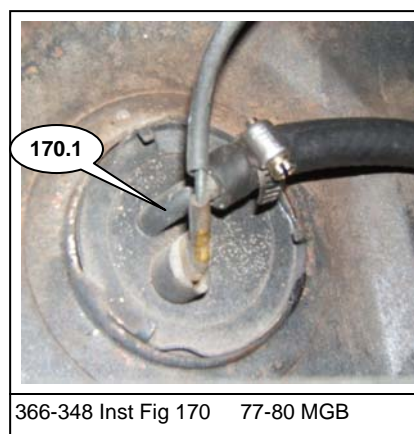
Part 19, continued

222. Slide small hose clamps over each end of the 24" length of 5/16" fuel hose.
223. Remove the original hose from the steel fuel line over the rear axle.
224. Connect one end of the 24" piece of hose to the original steel fuel line. Tighten the clamp. *If you found rust flakes in the gas you drained from the tank, we strongly suggest the addition of a second in-line fuel filter in the hose between the tank and the pump.*
225. Hold the fuel pump so the end with the electrical connections is "up" (166.1)
226. Slide the loose end of the 24" long piece of hose (166.2) onto the fitting on the end of the pump.
227. Tighten the hose clamp (166.3). This hose will *now serve to suspend the pump while we make the rest of our connections.*



366-348 Inst Fig 166

228. Slide a small hose clamp over each end of the 36" length of 5/16" fuel hose.
229. Locate the fuel sending unit on the right side of the fuel tank. Remove the old hose from the fitting on the tank (170.1). Slide one end of the 36" piece of fuel hose onto the fitting on the gas tank. Tighten the clamp. *On the 74.5-76 MGBs, there is a rigid steel line running from the sending unit to a hose that is connected to the pump. The steel line should be removed and cut with a tubing cutter at a convenient point. Reconnect the line to the sender. Slide the hose onto the cut end of the line and secure it with a clamp.*



366-348 Inst Fig 170 77-80 MGB

230. Connect the loose end of the 36" hose (172.1) to the open fitting on the fuel pump. (This end of the pump does not have the electrical connections) Tighten the hose clamp (172.2).
231. Let the red wire with white stripe hang down past the pump. Pinch the wire where it reaches the middle of the pump and cut the wire. (174.1)



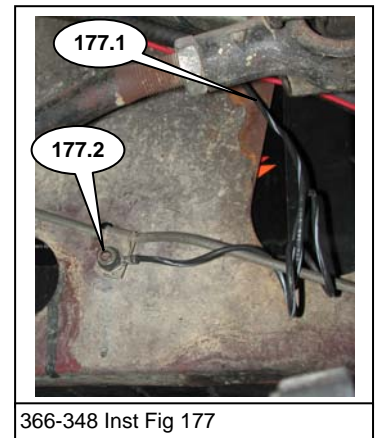
366-348 Inst Fig 172



366-348 Inst Fig 174

Part 19, continued

232. Strip the insulation off the end of the red wire with white stripe.
233. Crimp the #8 ring terminal (supplied in the kit) onto the wire. Secure it to the positive terminal on the fuel pump, which is labeled "+". (176.1)
234. Find the 30" long piece of black wire, a ¼" ring terminal and a #8 ring terminal supplied in the kit.
235. Strip both ends of the wire. Crimp the ¼" ring terminal to one end and the #8 ring terminal to the other.
236. Secure the end of the black wire with the #8 ring terminal to the negative terminal on the fuel pump, which is labeled "-". (176.3)
237. Run the black wire up and over the axle to the battery box on the passenger's side (177.1). Locate the ¼" stud welded to the side of the battery box (177.2). Remove the ¼" Nyloc nut from the stud using a 7/16" socket. Slide the ¼" ring terminal over the stud and replace the Nyloc nut. This is the ground connection for the pump.



This completes part 19 of the installation.

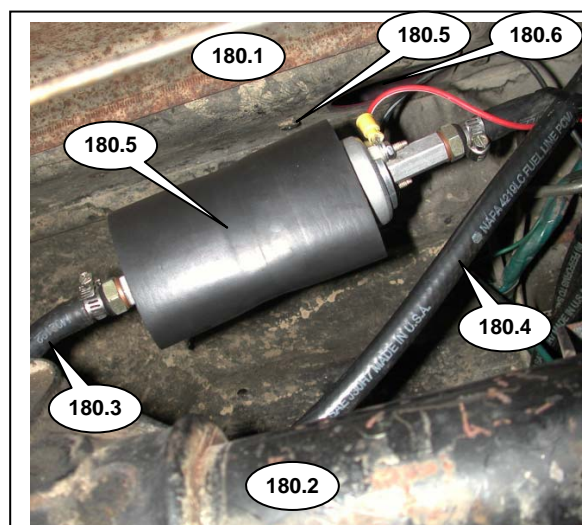
Installation Part 20 – Mounting the High Pressure Fuel Pump

238. Find the foam sleeve, large “P” clamp, the 1/4-28 x 3/4" bolt, and the 1/4" lock washer supplied in the kit. Slice the foam sleeve lengthwise. (Fig 178) We are going to wrap the foam around the pump to cut down on the noise. The rubber lined p-clamp will hold the foam in place and secure the pump to a welded nut in the forward bulkhead of the trunk, near the hole where the original SU pump was mounted.



366-348 Inst Fig 178

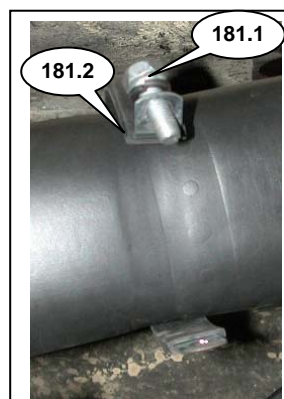
239. Push the pump up into the space behind the rear axle (180.2) and the up against the forward bulkhead of the trunk (180.1). The hose to the fuel tank (180.3) points toward the driver's side. The hose to the throttle body (180.4) points to the passenger's side. Note the nut welded to the bulkhead (180.5) and the large hole (180.6) for the original SU pump.



366-348 Inst Fig 180

241. Wrap the P-clamp around the sleeve and pump. Slide the lock washer over the bolt, and insert the bolt (181.1) through the hole in the end of the p-clamp that is bent at a 90 degree angle (181.2).

242. Squeeze the p-clamp together and push the bolt with washer through both holes of the p-clamp. (Fig 182)



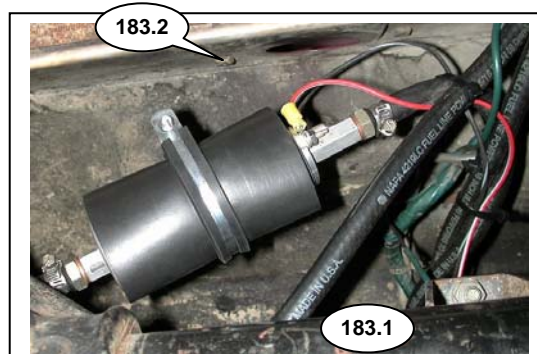
366-348 Inst Fig 181



366-348 Inst Fig 182

Part 20, continued

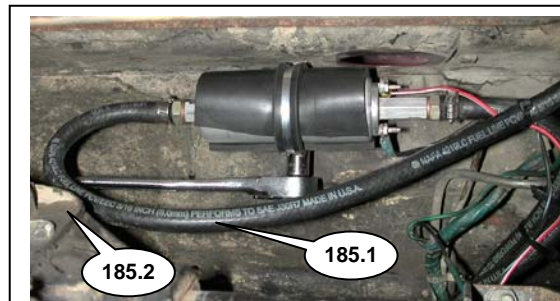
243. Reach over the axle (183.1) and move the pump assembly towards the original fuel pump hole. Rotate the p-clamp around the pump until the bolt is pointed toward the welded nut (183.2) closest to the center of the vehicle.



366-348 Inst Fig 183

244. Once the pump is up against the bulkhead, you will not be able to see the bolt or the welded nut from underneath. Use a 7/16" socket with an extension to hand thread the bolt into the welded nut.

245. Attach a ratchet to the extension and tighten the bolt. Find the end of the bolt where it protrudes into the trunk. Use a 1/4 - 28 nut and washer to lock the bolt in place; it cannot come loose. (See Fig 185b)



366-348 Inst Fig 185

246. The hose from the fuel tank (185.1) may wind up too close to the rear axle (185.2). To move it out of the way, loosen the p-clamp and rotate the pump/sleeve assembly so that the fuel hose (186.1) clears the path of the axle (186.2). Retighten the p-clamp. *If necessary, remove the mounting bolt and P-clamp and rotate the pump until the hoses are out of the way and then reinstall the pump.*



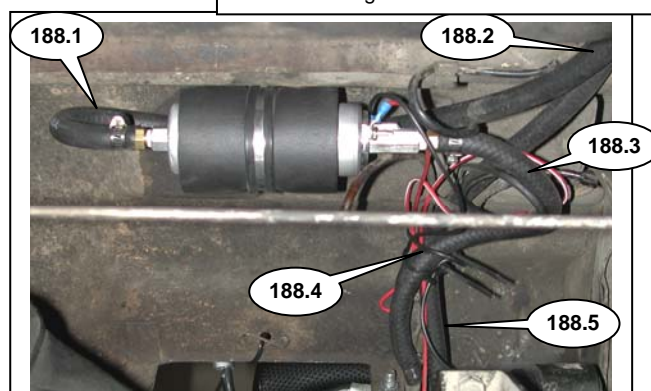
366-348 Inst Fig 185b

247. To finish the installation of the pump, route the hoses so they are not under tension and there are no kinks or sharp bends. Zip tie the hoses together or to other hard points in the area to secure them. (187.1)



366-348 Inst Fig 187

248. The finished installation should look something like Fig 188. The fuel hose to the tank (188.1) runs above the pump and curves around the end of the tank (188.2). The hose to the throttle body (188.3) curves out toward the right (passenger's) side of the car and forward, where it is zip tied to the fuel return hose (188.5). The extra length of red wire with white stripe and the black ground wire have been looped and zip tied in place (188.4). *To make a very neat installation, you may want to disconnect the rubber fuel lines from the pump and trim them, but you should leave enough slack to allow easy removal/reinstallation of the pump.*

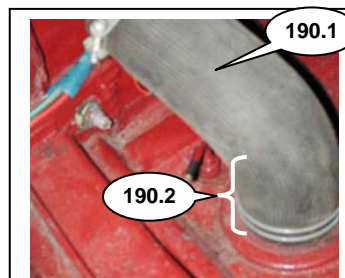


366-348 Inst Fig 188

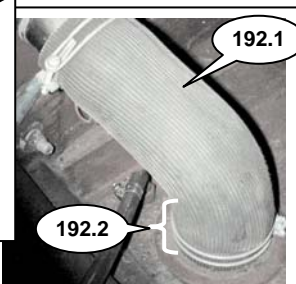
This completes part 20 of the installation.

Installation Part 21 – Connecting the Fuel return Hose in the Trunk

In early 1978, the filler neck hose used on the late MGB went from a BHH1886, a sharply bent, nearly 90-degree hose (Fig 190) to a BHH206 hose that was not so sharply bent (Fig 192). In the early version, the section of hose from the filler cap was nearly horizontal (190.1). On the later cars, the same section of hose angles downward (192.1). Where the hose connects to the tank, the early version has a long section of straight hose (190.2). The same section of hose on the later cars is much shorter (192.2) We found it very difficult to install the fuel return adapter in the later hose because there is just not enough straight hose where it connects to the fuel tank. We therefore include a 2 1/2" long piece of 2 1/4" ID filler hose in the kit for use on the later cars.



366-348 Inst Fig 190



366-348 Inst Fig 192

249. Using a tape or a ruler, measure the length of the straight section of hose where it comes up from the floor of the trunk. (190.2, 192.2) If the straight section is over 3", you have an **early hose**. If it is less than 3", you have the **late hose** and you will need to find the 2 1/2" long piece of 2 1/4" ID filler hose supplied in the kit. Loosen the hose clamps on the fuel filler hose and remove the hose.

250. **Early hose:** mark the hose 2 1/2" up from the end that connects to the tank inlet. Cut the hose using a single edge razor blade, knife, or large hose cutter. Reinstall the 2 1/2" piece of the fuel filler neck hose on the tank inlet. (Fig 194)

251. **Late hose:** install the 2 1/2" long section of fuel filler hose included in the kit.

252. Fit and tighten the factory hose clamp, securing the 2 1/2" long section of hose to the fuel tank inlet. (Fig 194)

253. Hold the fuel return adapter (196.1) so that the long tube (196.2) points down.

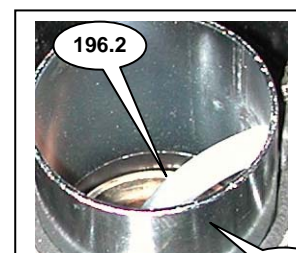
254. Slide one of the large band-type clamps (197.1) supplied in the kit over the end of the filler hose attached to the tank inlet (197.1).

255. Install the fuel return adapter (197.2) with the nipple (197.3) pointing towards the hole in the trunk where the fuel return hose enters the trunk.

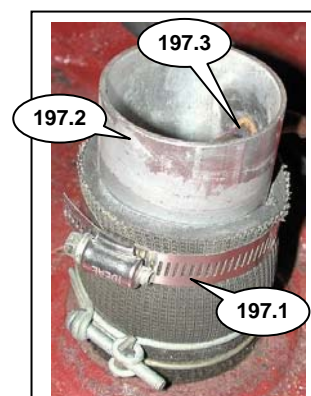
256. Tighten the band-type hose clamp (197.1) to secure the hose to the adapter.



366-348 Inst Fig 194



366-348 Inst Fig 196

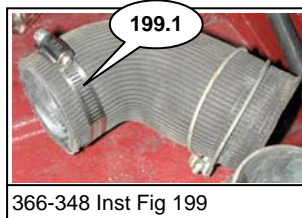


366-348 Inst Fig 197

Installation Part 21.1 – Fuel Filler Neck, Early Hose (to early 1978)

For cars with the later hose, go to Part 21.2

257. Slide one of the large band-type clamps over the cut end of the shortened early filler hose. (199.1)

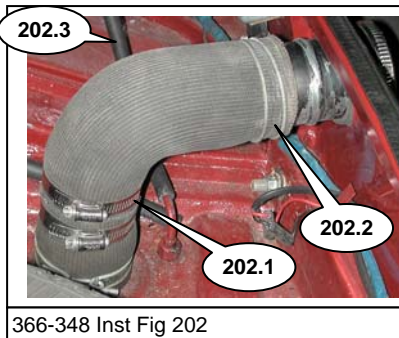


258. Install the cut end of the hose over the top of the fuel return adapter and start the other end onto the fuel filler inlet pipe. (201.1)



259. Slide the fuel filler inlet into the hose until the filler neck is fully seated against the filler neck grommet against the body.

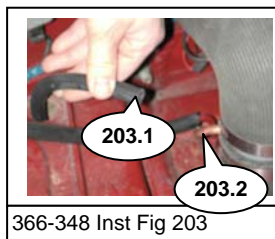
260. Slide the large band-type hose clamp (202.1) into position to clamp the hose to the fuel return adapter and tighten.



261. Slide the factory clamp (202.2) into position to secure the hose to the fuel filler inlet and tighten. *There is a small hose (202.3) that runs from the tank to the gasoline vapor separator (see Fig 205), which is mounted inside the right-rear fenderwell.*



262. Find the fuel return hose we ran into the trunk earlier. Slide a small hose clamp over the end of the hose (203.1). Locate the fuel return nipple on the outside of the fuel return adapter (203.2)

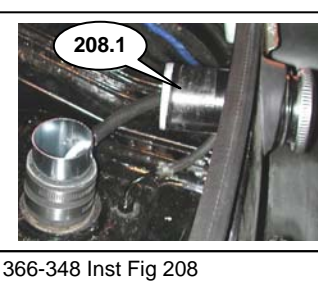


263. Push the end of the fuel return hose over the nipple and secure the hose using the small hose clamp. (204.1)



Installation Part 21.2 – Fuel Filler Neck, Late Hose (after early 1978)

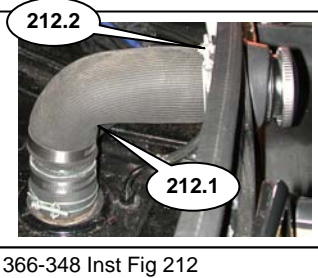
264. Normally, the steel filler neck points down at an angle on MGBs built after early 78. Before we can refit the filler neck hose, we need to make the filler neck more like the pre-78 MGBs. Rotate the filler neck (208.1) and the filler neck grommet (210.1) 180 degrees, so that the thick part of the filler neck grommet is up rather than down (210.1).



265. With the hose clamps in place on the hose, slide the original (un-cut) filler neck hose onto the filler pipe, and onto the fuel return adapter. Look carefully at the bend in the hose (212.1). If there is a tendency to kink at the bend, remove the hose and trim 1/4" to 1/2" off the top end of the hose (212.2). Refit the hose and tighten the clamps when you are satisfied with the fit.



266. Attach and clamp the return hose (214.1) Please refer to steps 191 and 192 above for additional information if necessary.

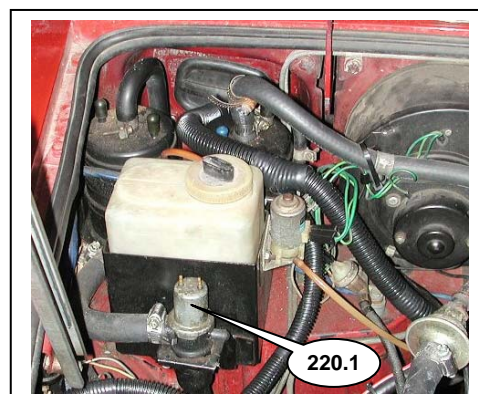


This completes part 21 of the installation.

Installation Part 22 – Installing the ECU

You will be removing some items temporarily to facilitate the installation of the ECU system. Keep these items and their mounting hardware organized, as they will be reinstalled once the ECU is mounted. These images and instructions are specific for the 77-80 application, Earlier cars will differ.

267. Remove the three hoses and the two wires from the run-on control valve (220.1).



366-348 Inst Fig 220

268. Remove the lid off of the washer bottle and set it to one side in the engine compartment, leaving the washer fluid tube attached. (221.1)

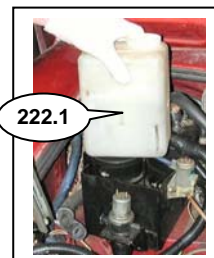
269. Lift the washer bottle (222.1) out of the sheetmetal bracket and set it aside.

270. Using a 7/16" socket, remove the two bolts (224.1) that secure the washer bottle bracket.

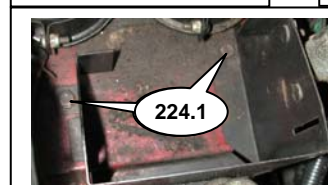
271. Remove the two Phillips head screws under the washer bottle bracket's front edge. (225.1)



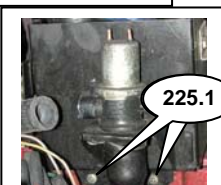
366-348 Inst Fig 221



366-348 Inst Fig 222



366-348 Inst Fig 224



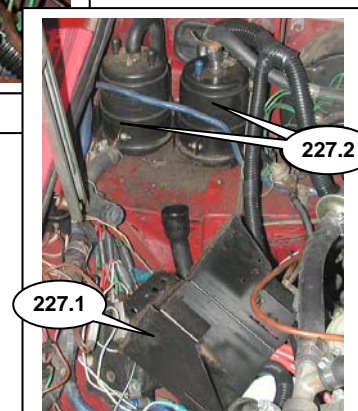
366-348 Inst Fig 225

272. Remove the two wires connected to the windshield washer pump. (Fig 226)



366-348 Inst Fig 226

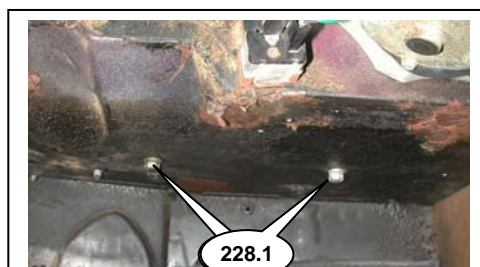
273. Remove the washer bottle bracket and set it out of the way. (227.1) We need to remove the two carbon canisters (227.2) next, but they are attached with bolts from inside the cockpit.



366-348 Inst Fig 227

Part 22, continued

274. From the passenger side footwell, remove the under-dash trim panel.
275. Using a 7/16 socket, remove the 2 nuts under the dash that secure the evaporative emissions canisters. (228.1)



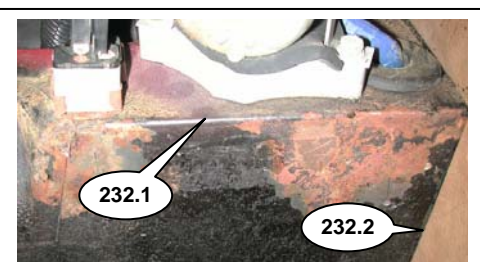
366-348 Inst Fig 228

276. Pull up on the evaporative emissions canisters and place them on a block of wood (230.1) or rolled up magazine. *We need to drill holes for the ECU mounting screws in this area and we cannot take a chance on damaging the canisters. Only one canister was used from 70-78.*



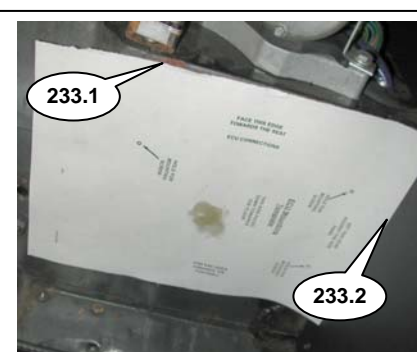
366-348 Inst Fig 230

277. Go back to the passenger side footwell. Looking up at the underside of the dash, Locate the edge of the sheetmetal (232.1) near the wiper motor and the edge where the sheetmetal and the passenger's side kick panel meet (232.3). *These two edges will help locate the paper template we will use to locate and drill the holes used to mount the ECU.*



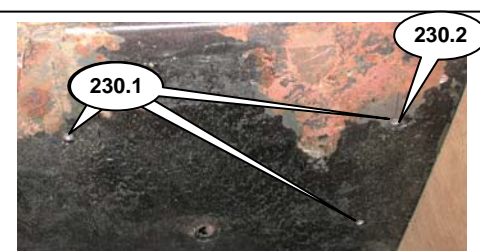
366-348 Inst Fig 232

278. Hold the paper template supplied in the kit up against the sheetmetal, with the left hand edge of the paper (233.1) following the bend in the sheetmetal (232.1). Move the top edge of the paper (233.2) over against the right hand kick panel (232.1) and tape it into place.
279. Mark the position of the three holes shown on the template using a center punch. *If you have a spring loaded (automatic) center punch, this is the place to use it.*



366-348 Inst Fig 233

280. Drill the three holes for the ECU mounting screws with a #30 drill (230.1) and remove the template. A #30 drill bit is 0.1285" in diameter. A 1/8" inch drill bit is 0.125" in diameter. *If you don't have a #30 drill bit, use the 1/8" drill bit. It will be a little harder to install the screws, but it will work. The hole closest to you on the right (230.2) will be called hole #1.*



366-348 Inst Fig 234

Part 22, continued

281. Reinstall the carbon canisters, remembering to tighten the nuts inside the cockpit. Reinstall the windshield washer bottle bracket, replace the washer bottle lid, reconnect the wires for the washer pump, and reconnect the run-on control valve. (Fig 235)



366-348 Inst Fig 235

282. Back into the passenger's side footwell.

283. Position the ECU with the mounting flanges up and the rectangular white plastic plug receptacles facing the passenger seat. (Fig 236)



366-348 Inst Fig 236

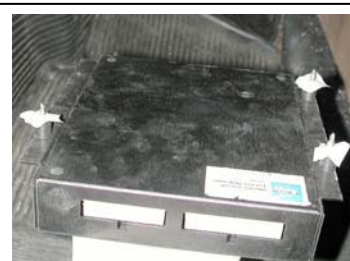


366-348 Inst Fig 237

284. Find the #8 x 1" self-tapping screws supplied in the kit and slip one through the left rear hole in the mounting flange (236.1). *Remember, rear is toward the back of the car...*

285. Slip a plastic spacer over the screw. (Fig 237)

286. Take a small piece of masking tape and stretch it over the screw to hold the screw and spacer in place on the ECU while you install it. (Fig 238 & 239)



366-348 Inst Fig 238



366-348 Inst Fig 239

287. Repeat with two additional screws on the right-hand side next to the kick panel.

288. Hold the ECU with the three screws and spacers up against the sheetmetal, lining up the screws with the three hole locations. Gently /carefully start each screw. Once all three screws are started, pull the tape out. Then tighten the screws to secure the ECU in place (do not over tighten the screws or they will strip out!). (Fig 240)

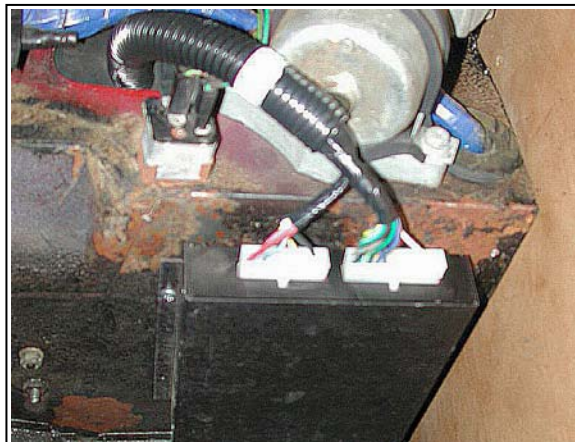


366-348 Inst Fig 240

Part 22, continued

289. Connect the two harness ECU plugs. One plug is wider than the other and has more pins, so you cannot mix them up. Push the plugs in until you hear /feel a click, indicating the locking tabs have engaged. (Fig 241)

290. Reinstall the under dash trim piece. It may need to be slightly trimmed to clear the ECU.



366-348 Inst Fig 241

291. Locate the rectangular plug we removed from the firewall and modified by adding a 1" hole. (Fig 242)

292. Work the fuel injection harness through the slot in the plug and into the hole. The harness with its black plastic sleeve will fill up the 1" hole we made in the plug.



366-348 Inst Fig 242

293. Reinstall the factory rubber firewall plug (Fig 243)
It will take some time to work the plug into place. Press lightly just inside the outer lip. You will feel the plug pop into place as you press on it. Work your way around the edge until the plug is in place. If you press too hard, the plug will pop through the hole. You will have to pull it back out and start over.

This completes part 22 of the installation.

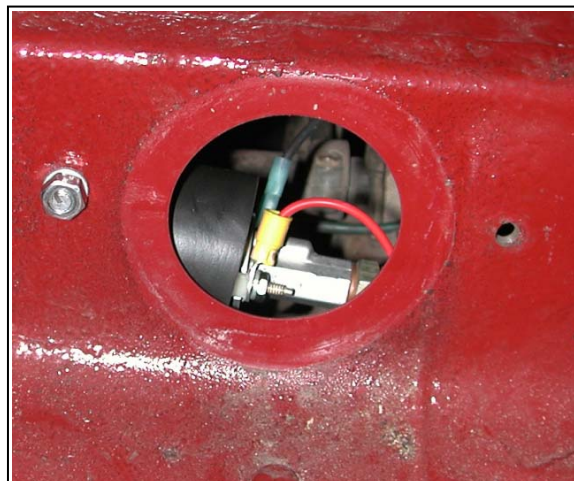


366-348 Inst Fig 243

Installation Part 23 – Testing the Fuel Injection Wiring & Plumbing

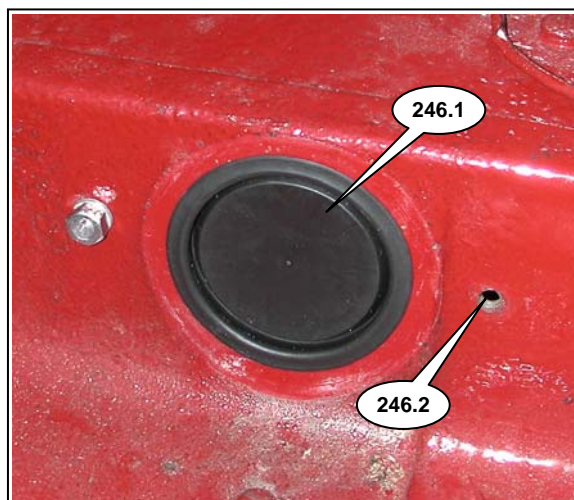
294. Reconnect the battery.
295. Turn the key to the on or run position (not to START). Listen for the fuel pump, which will run for about 3 seconds every time you turn the key on. If you do not start the car, the fuel pump will shut off automatically.
296. Starting in the trunk, check every fuel supply hose and fuel return hose connection for leaks.
297. Look into the hole in the trunk where the old fuel pump and grommet used to sit to see if the pump and its connections are secure. (Fig 245)
298. Look under the car every fuel supply hose and fuel return hose connection for leaks.
299. Turn the ignition switch off.

If the fuel pump worked and all the connections are tight, we will take care of a few loose ends.



366-348 Inst Fig 245

300. Locate the 2.5" diameter plastic plug supplied in the kit. Insert it into the hole in the trunk. (246.1) *You will need to push just inside of the V-shaped circular groove in the plug to get it to pop into place. This plug will provide relatively easy access to the electrical connections on the high pressure fuel pump should that be necessary.*
301. Locate the ¼-28 Phillips head screw removed from the welded nut (246.2) when we removed the original SU fuel pump. Replace the screw and tighten it. *We are using the screw just to plug the hole.*



366-348 Inst Fig 246

This completes part 23 of the installation.

Installation Part 24 – Refilling to Cooling System

- 302. Back in the engine bay.
- 303. Check the lower radiator hose clamp to make sure it has been retightened.

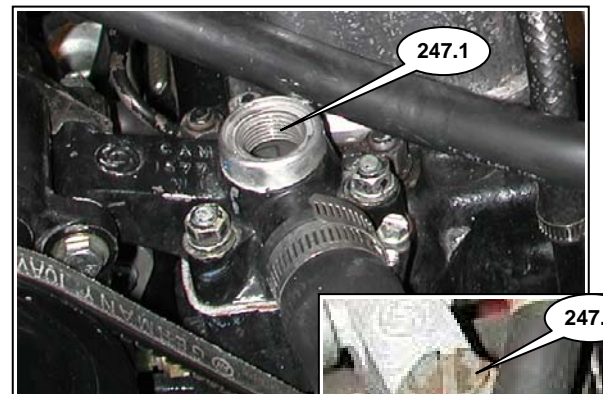
We will now refill the cooling system.

- 304. Set heater control in the cockpit to HOT.
- 305. Remove the cap on the expansion tank. (248.1)
- 306. Pour the 50-50 mixture of anti-freeze and water we drained from the system back into the expansion tank (248.2) until the tank is about ½ full.



366-348 Inst Fig 248

- 307. Pour more of the 50-50 mixture of anti-freeze and water into the open thermostat housing (247.1) until the fluid reaches the bottom thread of the opening. *You will have some of the anti-freeze mixture left over. We will use more of the mixture when we top up the cooling system in a minute.*
- 308. Locate the new 324-485 gasket for the top of the thermostat housing (247.1)
- 309. Put a thin film of Hylomar or other gasket dressing on the gasket and replace the threaded plug (247.2)
- 310. Tighten the plug using a 13/16 socket.



366-348 Inst Fig 247



366-348 Inst Fig 247B

Installation Part 25 – Starting the Engine

We are going to start the engine, which we need to do before we can top up the coolant. Before we turn the key, it is important to understand how the system works and what may happen when we try and start the engine. Every time you turn the key ON, a small amount of fuel is injected to help startup. We have turned the key on at least once when we checked the operation of the fuel pump and for fuel leaks. SO, the engine may already be loaded up with fuel, especially if the key was turned to the ON position several times. This means that the engine may run roughly at first. If so, rev the engine for a few seconds to pull the excess fuel charge through. In an extreme case, the engine may be flooded. If the engine is flooded, hold the throttle to the floor and start the engine. The throttle position sensor will recognize full throttle at start up and the ECU will temporarily stop injecting fuel.

311. Start the engine and run it for about 30 seconds. *If the engine does not start, review the paragraph above and the troubleshooting section at the end of these instructions.*
312. With the engine idling, take a close look at the ECT adapter block, and check for leaks. *Use a mirror and a flashlight to check the back and underside of the connections. If you feel for leaks at the gaskets or at the sensor, be careful. When the engine warms up these areas will be very hot and you can burn yourself.*
313. After running for about 30 seconds, shut the engine off.
314. Top off the coolant system as follows:
315. Loosen the filler cap on the expansion tank to release the pressure (if any) and fill it up about half way with more of the 50-50 anti-freeze mixture. Replace the pressure cap.
316. Remove the plug and gasket from the thermostat housing and pour more of the 50-50 mixture of anti-freeze and water into the open thermostat housing until the fluid reaches the bottom thread of the opening. Replace the plug and gasket.
317. Restart the engine.
318. Check your timing- the base timing should be 10 degrees, as specified by the factory.
319. Allow the car to warm up to the point where the top radiator hose is warm to the touch, which means the thermostat has opened.
320. Shut the car off.
321. Top up the cooling system one last time, repeating the steps detailed immediately above.
322. Restart the engine.
323. Verify that the electric cooling fans come on automatically. *If the engine gets completely warmed up, but the fans do not turn on, double-check that the fans have power. Check the black connector with a brown wire (fan power) attached to the 12+ V constant male spade terminal labeled as "7" at the fuse block. It may have been knocked loose when the fuel injection harness was connected to the fuse box. When should the fans come on? On the early cars, it's about 185 degrees Fahrenheit; the needle on the gauge will be about halfway. On the later cars it's about 205 degrees; the needle on the gauge will be a little past halfway. The problem is the instruments fitted to the late MGB have no scale.*
324. Enjoy your Moss MGB Fuel Injection System! Visit us on the WEB at www.MossMotors.com

Installation Part 26 – Tune Up & Maintenance

California Air Resources Board Executive Order Number

The CARB E.O. number for this kit is: D-453-4

IDLE SPEED

Upon startup engine should rev up above 1200rpm and then over time drift down to ~950rpm depending on the temperature. Different vehicles with various pistons, cams, distributors and cylinder heads will behave differently, so the actual RPM you see will be different. **DO NOT** adjust the idle set screw! If the idle is 1200 RPM or more after the car is fully warmed up, it means you probably have a vacuum leak between the manifold and the head. See the comments under Vacuum Leaks below.

SPARK PLUGS & TIMING

Follow the procedure for setting the spark plug gap and timing given in the factory (or Robert Bentley) workshop manual. Use standard resistor type plug wires. Stay away from solid core plug wires. The RF will affect the ECU and your car will not run correctly.

COOLING SYSTEM

Keep the coolant system topped off. The late MGB runs hotter to help it meet emission standards, and running the car low on coolant will create all sorts of problems.

AIR CLEANER

The air cleaner is washable. We suggest using K&N cleaning fluid (231-480) and oil (231-490). A replacement air filter is available (771-982).

VACUUM LEAKS

Pay particular attention to vacuum leaks as they will degrade performance. The MAP sensor will see less vacuum than it should, and the ECU will see “load” and it will dump more fuel. You will be running rich at idle, and the idle will naturally tend to be higher, perhaps as much as 1200 to 1500 RPM.

ADJUSTING THE ECU

The fuel injection ECU is sealed and not tunable. Resist the temptation to fiddle with it.

Installation Part 27 – Troubleshooting

Problem - Car will Not Start

1. Check Fuel Pump

- 1.1. Listen for operation of the fuel pump in the first 3 seconds after turning the ignition key to ON.
Remember, the pump will shut off automatically if the key is left in the run position without going to the START position.
- 1.2. If the pump is operating, go to 3
- 1.3. If the fuel pump is not operating, go to 2

2. Pump is Not Working

- 2.1.1. Check fuel pump power.
 - 2.1.1.1. The red wire with white stripe should have 12V at the “+” terminal on the pump.
 - 2.1.1.2. Check for 12V at the fuse box connection, position 7.
 - 2.1.1.3. Determine why there is no power and correct the problem.
- 2.1.2. Check the fuel pump ground.
 - 2.1.2.1. Ground wire at fuel pump negative post should show continuity to chassis (use OHM meter)
 - 2.1.2.2. If no continuity, check fuel pump ground at battery box.
 - 2.1.2.3. If ground at battery box is bad, move wire to an alternate location or scuff metal bare to establish a good ground connection.

3. Pump is Working

- 3.1. Engine flooded?
 - 3.1.1. If you have a strong smell of gasoline near the air intake or throttle body, hold the throttle to the floor and start the engine. The throttle position sensor will recognize full throttle at start up and the ECU will temporarily stop injecting fuel. The excess fuel should be pulled through the engine and the car should start.
- 3.2. Engine is Not Flooded.
 - 3.2.1. Check the harness 12V+ switched power connection at fuse box, position 5.
 - 3.2.2. Check the connection of the two large plastic connectors at the ECU – make sure the plugs are properly snapped in place.
 - 3.2.3. Check the connection at the t-tap.
 - 3.2.3.1. There should be continuity between the negative terminal of the coil and the female spade connector part of the t-tap.
 - 3.2.3.2. Check the male spade connector on the white wire that plugs into the T-tap; if the connector is not crimped onto the wire solidly you may have a loose or intermittent connection.
 - 3.2.3.3. Check the connection between the male spade on the white wire and the female spade in the t-tap. You can push them together without the metal pieces actually touching.



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Instruction Sheet 772-055 Dec, 05

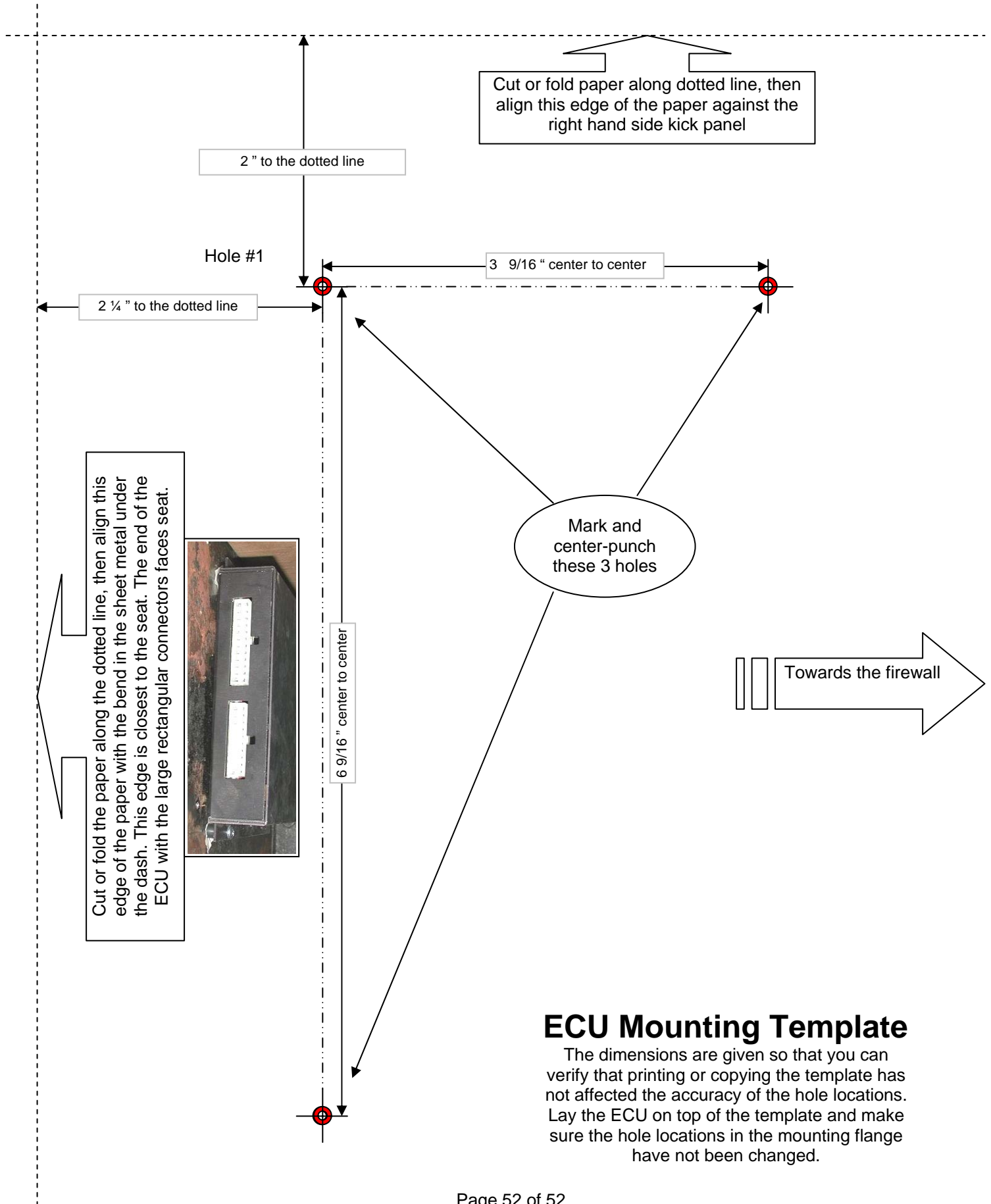
Part 28 - Contents of the Kit

Note- specifications and components are subject to change and revision without notice.

No.	Qty	UOM	Description
Throttle Body Components			
770-845	1	EACH	THROTTLE BODY ASSEMBLY
052-815	2	EACH	POLYMER BEARING, THROTTLESHAFT- send to TWM to install in TB
772-218	1	EACH	GASKET, UPPER TO LOWER, MGB FI
052-252	4	EACH	BOLT, HEX, 5/16-18 X 1.0
			Install 1 under throttle stop
			Bag the other 3 with clamps
052-803	1	EACH	BELLCRANK ARM, THROTTLE CABLE
			Drill hole, cut slot, cut brkt
771-969	1	EACH	TPS SENSOR, MGB FI
771-970	1	EACH	IDLE AIR CONTROL MOTOR, MGB FI
771-971	1	EACH	INJECTOR, FUEL INJECTION, MGB
052-811	1	EACH	INJECTOR CLAMP
771-972	1	EACH	MAP SENSOR, MGB FI
771-973	1	EACH	COOLANT TEMP SENSOR, MGB FI
771-774	1	EACH	RETURN SPRING, GM, MGB FI
771-775	1	EACH	RETURN SPRING, BKT, MGB FI
772-029	1	EACH	SPRING, THROTTLE STOP, MGB FI
772-229	1	EACH	THROTTLE CABLE BRACKET, MGB FI
772-052	4	EACH	BOLT, FLATHEAD SOCKT M6X1.0X16
			Upper to Lower TB bolts
052-801	2	EACH	CAP SCREW,BUTTON HD,M4X.7X16MM
052-802	2	EACH	CAP SCREW,BUTTON HD,M4X.7X12MM
052-803	1	EACH	BELLCRANK ARM, THROTTLE CABLE
772-269	1	EACH	LOCK WASHER, 1/4", ZINC
052-805	1	EACH	WASHER, M6X1.6X18OD, ZINC
052-806	1	EACH	NUT, HEX, M6 X 1.0 X 6, ZINC
052-807	1	EACH	BOLT, HEX,M5 X 0.8 X 30.0,ZINC
052-808	2	EACH	SCREW, BUTTON HEAD,M5X0.8X10
052-809	8	EACH	SCREW, BUTTON HEAD,M3X0.5X8
			Fuel Pressure Regulator Cap
051-142	2	EACH	HOSE BARB, 5/32 VACUUM
051-680	2	EACH	HOSE BARB, 3/8 VACUUM
771-493	1	EACH	DISC, SPRING TPS
771-496	1	EACH	RETAINER, SHAFT
			Holds spring on TPS side
052-813	4	EACH	BOLT, HEX, M6 X 20, ZINC,10.9
366-235	2	EACH	GASKET
			Above & below heatshield mnt
772-246	1	EACH	O-RING, SAE J200, WALKER G1371
			Lower seal for fuel inector
771-494	1	EACH	GUARD, SPRING, 650
772-272	4	EACH	SCREW,ALLEN,BTNHD,6-32X1/4INSS
			supposed to come w/regulator
772-273	1	EACH	AHCS, 10-32 X 0.75, ZINC
			Put inspectors lacquer on bolt once fuel pressure is set
772-274	1	EACH	NUT, HEX, 10-32, ZINC
			for AFPR

No.	Qty	UofM	Description
Kit Components			
771-967	1	EACH	ECU, FUEL INJECTION
051-444	2	EACH	HOSE BARB, 1/8 NPT X 1/4 Assem. barbs to pump w/teflon
771-974	1	EACH	FUEL PUMP, MGB FI, WALBRO
051-852	1	EACH	SLEEVE, FUEL PUMP SILENCING
772-294	1	EACH	P-CLAMP, 2.00 IN. ID
051-474	12	EACH	HOSE, FUEL, 5/16, BULK 12"-Cutoff Valve to ThrtlBdy
051-474	12	EACH	HOSE, FUEL, 5/16, BULK 12"-Throttle Body to Filter
772-005	1	EACH	INTAKE HOUSING, MGB FUEL INJ.
772-051	3	EACH	AHCS, M6 X 1.0 X 60, 12.9 Intake Housing Bolts
771-076	1	EACH	AIR FILTER, RED, GENERIC, 2.5IN
051-017	1	EACH	CLAMP, HOSE, SAE NO. 40
052-042	28	INCH	HOSE, PCV, 5/8IN., BULK
051-970	1	EACH	HARNESS, MGB, FUEL INJECTION
772-053	2	EACH	VACUUM CAP, RUBBER, FITS 5/32 EGR, to cap vac port on throttle body for mech adv dist
772-226	1	EACH	FUEL RETURN ADAPTER, MGB FI Pkg so tube won't get bent
326-280	2	EACH	CLAMP 1 13/16-2 13/16 2-1/8 Fuel filler neck
051-474	14	FOOT	HOSE, FUEL, 5/16, BULK Fuel return, TB to tank
051-474	3	FOOT	HOSE, FUEL, 5/16, BULK Fuel tank to fuel pump
051-474	2	FOOT	HOSE, FUEL, 5/16, BULK Fuel pump to hard line
377-310	1	EACH	FILTER, FUEL, FOR 5/16 IN HOSE Verify 3" hose included in box
051-474	2.67	FOOT	HOSE, FUEL, 5/16, BULK ***SHOULD BE 32IN EXACTLY*** Fuel filter to TB
051-191	12	EACH	CLAMP, HOSE, MINI, SAE NO. 4
051-016	15	EACH	CABLE TIE, 4IN.
161-637	2	EACH	RING CONN, #8, 16-14 GA. WIRE Fuel pump positive terminal Fuel pump negative terminal
161-610	30	INCH	WIRE, BLACK, 16 GAUGE
772-244	3	EACH	SCREW, #8 X 1.0, SHEET METAL ECU mounting screws
772-245	3	EACH	STANDOFF, 3/8 DIA, 0.5" LONG
772-251	1	EACH	ECT SENSOR BLOCK, MGB FI PACKAGE IN BAG BY ITSELF!
772-252	1	EACH	STICKER, CARB EO, MGB FUEL INJ
772-293	2	EACH	STUD, 1/4-28 X 2.0 Water choke/ECT block studs
295-040	2	EACH	GASKET, WATER CHOKE OUTLET
772-269	3	EACH	LOCK WASHER, 1/4", ZINC Water choke/ECT block Fuel Pump P-clamp mount
772-295	2	EACH	SCREW, SHEETMETAL, #6 X 1-1/4 MAP sensor mounting screws

No.	Qty	UofM	Description
324-115	3	EACH	WASHER, FLAT, 1/4 ID, 3/4 OD (2) ECT adapter block Fuel Pump P-clamp mount
772-270	1	EACH	BOLT, HEX, 1/4-28 X 0.75,GRD-8 Fuel pump P-clamp mount
051-260	22	INCH	HOSE, PCV, 3/8 IN ID, BULK ECT/Choke tube hose
161-630	1	EACH	T-TAP, 22-18 GAUGE WIRE Tach signal to ECU
161-620	1	EACH	CONN, MALE SPADE, 16-14 GA. FI Harness, white wire
051-542	2	EACH	RING TERMINAL 1/4, 16-14GA ECU Ground black w/white Fuel Pump Ground
161-615	2	EACH	CONN, FEMALE SPADE, 16-14 GA. 5 AMP Inline Fuse, 12VSwitch 15 AMP Inline Fuse, 12VConst
772-271	2	EACH	SPADE,PIGGYBACK,1FEM TO 2 MALE
052-177	1	EACH	HOSE, VACUUM, 5/32 X 40IN.
051-825	1	EACH	HOSE, VACUUM, 5/32 X 30 IN
771-335	1	EACH	LOCTITE, BLUE, INDIVIDUAL USE
326-260	1	EACH	CLAMP, HOSE, BAND TYPE Crankcase evap to AF hose
772-266	1	EACH	CAPPLUGS 2.5" HOLE PLUG
772-055	1	EACH	INSTRUCTIONS, FUEL INJECTION
328-485	1	EACH	GASKET, OUTLET PLUG,T-STAT HSG
215-230	2		#6 Flatwashers
770-055	10		Cable Ties, 6"
772-296	1		Fuel Filler hose extension, 2.5" long, 2.25" ID for later cars
772-351	1		Cap, to seal 1/4" nipple
772-377	1		Wiring Kit, Inertia Switch
161-615	2		CONN, FEMALE SPADE, 16-14 GA.
161-605	140 IN		WIRE, RED, 16 GAUGE
770-269	2		BUTT CONNECTOR, 14-16 GA, BLUE
161-620	2		CONN, MALE SPADE, 16-14 GA.
161-612	2 IN		WIRE, WHITE, 16 GAUGE



ECU Mounting Template

The dimensions are given so that you can verify that printing or copying the template has not affected the accuracy of the hole locations. Lay the ECU on top of the template and make sure the hole locations in the mounting flange have not been changed.